

INTRODUCTION

Chapter 4 identifies the physical, biological, social and economic impacts of implementing the alternatives described in Chapter 2. It discusses only the impacted resources. No impacts to geology or topography would result from any of the alternatives.

This chapter is divided into several sections: (a) Impacts Common To All Alternatives; (b) Impacts Of Each Alternative; (c) Short-Term Uses Versus Long-Term Productivity; and (d) Irreversible and Irretrievable Commitment Of Resources.

A mitigation measures section, normally presented in this chapter has not been included. Measures to avoid or reduce environmental impacts have been designed into the proposed management actions. Additional mitigation measures might be applied, if further assessment of environmental concerns at the activity plan level indicate the need.

Impacts are defined by four terms; no impact, minor impact, moderate impact and significant impact. No impact is self explanatory. A minor impact is defined as a short-term impact, usually lasting less than 5 years, which might be apparent as long as 15 years, but would not be evident after 15 years or result in a cumulative impact. A moderate impact is defined as a short-term impact which would extend into the long term (past 15 years). There could be some long-term and/or cumulative impacts. A significant impact is defined as a short or long-term impact which results in major long-term and/or cumulative impacts. Additional quantification of impacts such as acreage figures, etc. have been provided when this information was available.

ANALYSIS ASSUMPTIONS AND GUIDELINES

The following assumptions were used to analyze the impacts of each alternative to the ecological components.

General Assumptions

Present uses and trends concerning public land resources would continue.

Each alternative was analyzed by an interdisciplinary team as if it were a fully funded plan, with all the personnel required to implement the plan's decisions.

Implementation of the Resource Management Plan (RMP) would begin in 1988 and would be completed within 10 years.

Impacts would be monitored and management practices adjusted as necessary, to achieve the stated objectives.

Implementation of activity plan level projects would be subject to environmental analysis under the National Environmental Policy Act (NEPA).

BLM would conform to state and local regulations and policy to the fullest extent possible.

The amount of impact would be proportional to the extent of interference or disturbance to an activity or resource value.



Environmental
Consequences

Resource Specific Assumptions

Soil

Erosion rates would be proportional to the amount of surface disturbance.

Water

The necessary water rights would be obtainable.

Mineral Resources

Mineral exploration and development activity would be dependent on economic and other external factors.

Further definition of mineral resource quantities and quality can be expected from future mineral exploration.

Recreation

The potential may exist within the Upper Missouri National Wild and Scenic River Corridor (UMNWSR) for a variety of private initiatives to provide needed services. Private initiatives might range from operation of a small campground to more elaborate concessions, similar to those now providing extensive services in national parks.

Different types of off-road vehicles (ORV) use would create comparable impacts. The current trend in ORV use on public land is expected to gradually increase.

Lands

Disposal of public lands would include conveyance through sale, exchange or other means, with priority given to exchange. Some of the disposal land placed into private ownership may be put into agricultural production.

IMPACTS COMMON TO ALL ALTERNATIVES

Previous management direction has been provided in the South Bearpaw, Triangle, Fergus, Phillips, and Blaine Management Framework Plans (MFPs). A number of actions from these MFPs were brought forward into the Management Common To All Alternatives section of Chapter 2. The majority of these decisions have been analyzed in programmatic environmental impact statements and/or environmental assessments. The following documents contain the environmental analysis given in the Management Common To All Alternatives section: the Prairie Potholes Environmental Impact Statement (EIS), Missouri Breaks Grazing EIS, Missouri Breaks Wilderness Suitability Study EIS, Lewistown Oil and Gas Environmental Assessment (EA), and the Lewistown Forest Products EA. The cumulative impacts from these documents can be found in Appendix 4.1. These impacts will continue under each alternative proposed in this document.

Impacts to Air

All current and anticipated future impacts to air quality are short-term, noncumulative and of minor importance. Dust and exhaust emissions from vehicle traffic and construction activities; chemical spraying for noxious weed control; and gas venting or flaring from oil-gas development are examples of air pollutants that dissipate rapidly and have only a minor impact on overall air quality.

Impacts to Water

Most ORV use impacts water resources to some degree, by accelerating natural erosion rates and sediment delivery. Sediment itself shortens the life span of water impoundments and degrades water quality and aquatic habitat.

ORV use on flat or gently sloping grassy areas when soils are dry may have little or no impact, as long as the trail is traveled only once. Continual use of the same trail will result in removal of the vegetative cover and expose the soil to water erosion. Other impacts are listed under the Soils section of each alternative. ORV use on those same areas when wet greatly increases the damage to vegetation and subsequent soil erosion. If ORV use is excluded from damaged areas, natural revegetation will generally occur quickly.

ORV use on sedimentary breaks type soils is damaging during any season, especially on slopes greater than 25%. These soils have the highest water erosion hazard and consequently the highest sediment production. Revegetation is very difficult. Bare soils and eroded areas persist for long terms and generally need some type of mechanical treatment and seeding to stabilize erosion rates.

Impacts to Paleontological Resources

There are no anticipated negative impacts to paleontological resources from the alternatives. Some minor positive benefits may result from the development of interpretive sites.



Impacts to Mineral Resources

Continuing the no lease policy for oil-gas in the UMNWSR Corridor could result in a significant loss of federal mineral reserves through drainage by other state and private leaseholders.

The potential for conflicts between mineral extraction, particularly locatables, and Native American religious practices will continue in the Sweet Grass Hills. These conflicts between mining and the American Indian Freedom of Religion Act are very difficult to resolve and will be present in varying degrees in each alternative. If the conflicts continue, mining interests may be discouraged from investing in exploration and development projects because of the additional costs in legal fees and permitting. This would be a moderate negative impact to the minerals industry.

Land tenure adjustments consolidating mineral ownership in areas containing locatables and saleables would increase operator efficiency by creating large blocks of land and allowing larger mining efforts than are now possible in a scattered ownership land pattern. Lands considered for exchange would have their mineral character and potential evaluated, increasing knowledge of mineral resources on these lands. Separation of federal minerals from surface would complicate BLM administration and increase the industry cost of developing these minerals. These impacts both positive and negative could be locally significant, depending on the specific land tenure proposals.

Impacts to Vegetation

Development of five woodland sites within the UMNWSR Corridor, by modifying vegetation from sagebrush/grass to drought resistant hardwood species, would increase wildlife security cover, provide shade for recreationists and enhance the visual appeal of the area by creating more vegetative diversity. A slight reduction in sagebrush/grass vegetation could lower the amount of livestock forage. Impacts would be minor.

Major hardrock mining development in the Sweet Grass Hills could produce locally significant negative impacts to vegetation communities.

Impacts to Land Resources

Impacts created from the land tenure adjustment issues are identified under the affected resource.

If an alternative does not impact a resource component, it is not discussed in the following text.



IMPACTS OF ALTERNATIVE A: (NO ACTION)

Impacts to Soils

Land Tenure Adjustment

A total of 44,143 acres of public lands would be disposed of by exchange and the Recreation and Public Purposes Act (R&PP).

Some of the public land transferred to private ownership would be farmed, and some of that land would be highly erodible and/or farmed without proper conservation practices, which would contribute to increased wind and water erosion and decreased soil productivity. The greater the public land disposal acreage, the greater the potential for increased wind and water erosion of soil and the subsequent loss of productivity.

Off-Road Vehicles

Off-road vehicles lower the natural productivity of soil through compaction and increased wind and water erosion. The soils of the Missouri Breaks (soil subgroups 3, 4, 5, and 16) and sedimentary soils (see Appendix 2.5) along glaciated prairie drainages could be significantly impacted by ORVs due to sandy or clayey textures; high erodibility factors; and slopes greater than 25%. The significant impact rating is due to water erosion, especially rill and gully erosion, and wind erosion on sandy areas. These impacts are caused by vehicular travel, both on and off roads and trails and are compounded by vehicular travel on wet soils. During dry periods increased wind erosion would result in a locally significant impact. Even limited ORV use on fragile soils would generally cause a drastic reduction in soil productivity and values.

There is potential for locally significant impacts to soils in riparian areas in the form of streambank instability. ORV use would break down banks and increase wind and water erosion of these areas.

This alternative limits vehicular use to existing roads and trails on 148,335 acres. There could be locally significant negative impacts from vehicular use of existing roads and trails.

An additional 168,855 acres of sedimentary breaks soils would be open to ORV use. Locally significant impacts, both on and off existing roads and trails, would occur in this area. Within this area is a 640 acre area which receives intensive use by cross-country motorcycle activities. This use has denuded native vegetation from portions of the area; increasing wind and water erosion in the area.

The remainder of the planning area, 308,908 acres, is open to ORV use. Impacts in these areas are expected to be minor and short term.

Rights-of-Way

Impacts from rights-of-way (ROW) facilities are usually associated with construction activities. Areas with high erosion susceptibility, shallow soils, steep slopes (greater than 25%), sparse native vegetation, and known slumping or mass wasting areas would have locally significant impacts from any surface disturbing activity. This alternative has the potential for locally significant impacts in

areas normally recognized as ROW avoidance areas. Impacts to soils (from ROW location) in areas other than sedimentary breaks soil types would be minor and short term.

The planning area contains approximately 100,000 acres of sedimentary breaks type soils with slopes greater than 25%, which are difficult and expensive to rehabilitate after disturbance. Where ROW facilities are located on these steep fragile soils there is the potential for the mitigative measures to fall short of rehabilitation goals and for locally significant long-term impacts. Impacts to soils, from ROW location, in areas other than sedimentary breaks type soils would be minor and short term.

Emphasis Areas

Locally significant long-term impacts would continue around oil and gas exploration and development sites. Soil compaction, soil excavation and drilling pollutants reduce soil productivity and increase soil erosion.

Upper Missouri National Wild and Scenic River Management

Facility Management

Facilities being considered (campgrounds and fences) would create minor impacts to soils. Facility location near streambanks would decrease streambank stability. Considerable and concentrated recreation use would increase soils compaction, reduce ground cover, reduce infiltration and increase erosion potential.

Impacts to Water

Land Tenure Adjustment

A total of 44,143 acres would be disposed of by exchange and/or the Recreation & Public Purposes Act sale.

If disposed of public land is farmed, erosion may occur, resulting in a negative impact to water quality through increased sedimentation. The degree of impact would depend on the amount farmed.

BLM acquisition of land along water courses would present minor potential for improvement of water quality through increased emphasis on improvement of riparian vegetation.

Off-Road Vehicles

ORV use impacts occur as vegetation and ground cover are removed. The bare soil in the ruts and trails left by ORVs is exposed to rill, gully and wind erosion, resulting in accelerating headcut advancement and deepening ruts. Sediment eroded from these ruts and trails is redeposited in downstream pools and reservoirs, thereby altering stream channels and shortening the life expectancy of water impoundments. Water quality is also lowered with the increase in sediment concentration.

The impacts of ORV use is especially evident on sedimentary breaks type soils (soil subgroups 3, 4, 5, 16; see Appendix 2.5) and on other soils with slopes greater than 25%. The impacts are compounded even further when these soils are wet.

Impacts also occur to riparian zones as streambank stability is reduced. Wind and water erosion would increase and water quality would decrease.

This alternative limits vehicular use to existing roads and trails on 148,335 acres. Locally significant impacts could occur on these existing roads and trails, especially during wet periods. Vehicles maneuver around rutted areas and potholes, widening existing roads and exposing more soils to potential erosion.

An additional 168,855 acres of sedimentary breaks type soils would be open to ORV use. Locally significant impacts, both on and off existing roads and trails, would occur. Within this area, a 640 acre parcel would be designated as an ORV intensive use area. Wind and water erosion would greatly increase as vegetation and ground cover is destroyed.

The remainder of the planning area, 308,908 acres, would be open to ORV use. These areas contain more suitable soils with less steep terrains and would experience only minor, short-term impacts.

The damage caused by ORV use could be reclaimed on areas with suitable soils and flatter slopes simply by restricting use until natural revegetation occurs. Other areas, such as extensive use areas, sedimentary breaks type soils and areas with slopes greater than 25% may require mechanical treatment and seeding in addition to restricting ORV use. Some areas may not respond to reclamation in the short term and accelerated wind and water erosion would persist into the long term.

Rights-of-Way

Water quality impairment from ROW facilities is usually associated with construction, is short term and generally reclaimable. In areas of sedimentary breaks type soils that have slopes greater than 25% (approximately 100,000 acres) ROW facility location has the potential for locally significant impacts to water resources due to runoff, erosion, and sedimentation.

Emphasis Areas

Locally significant impacts would continue around oil and gas exploration and development sites. The runoff from excavation work, roads, pipelines and drilling pollutants would decrease water quality.

Upper Missouri National Wild and Scenic River Management

Facility Management

Pit type toilets would be placed only where the bottom of the pits would be at least 10 feet above the water table. This would greatly reduce the potential for contamination of groundwaters. However, the more facilities with toilets, the greater the chance for contaminated water.

Streambank stability could be impacted at facility locations, however, the anticipated impacts would be minor and varied with the number of new facilities.

Impacts to Mineral Resources

Table 4.1 details the constraints on oil and gas development under this alternative.

Land Tenure Adjustment

A total of 44,143 acres would be disposed of by the R&PP Act and/or exchange in this alternative.

Land tenure adjustment impacts to mineral resources could occur where mineral potential is high. It is expected that only surface resources would be exchanged. Disposal of surface acreage located over federal minerals, with known mineral potential, results in diminished surface use control when permitting development of subsurface minerals. Reuniting federal minerals with federal surface would allow increased surface use control and facilitate better management of federal minerals. Detailed analysis of mineral potential would be required to prevent significant negative impacts when disposing of federal subsurface.

If BLM acquires federal minerals in areas managed under more stringent surface constraints (such as wilderness study areas), it could create locally moderate impacts to oil and gas development.

Off-Road Vehicle Management

There would be a minor negative impact to the minerals industry as a result of restrictions on ORV use in WSAs and in limited designation areas.

These restrictions would have a minor negative impact on exploration and development of locatable minerals. Properly filed notices and/or plans of operations constitute ORV authorization.

Right-of-Way Location

Under present management, the entire planning area would remain open to ROW locations. This is a moderate positive impact because it allows the minerals industry to select the most cost effective route.

Emphasis Areas

Kevin Rim

At present, observance of a 1/4 mile buffer zone around active raptor nesting sites causes minor impacts to oil-gas exploration and development by requiring work to be delayed or routed differently.

Sweet Grass Hills

Opening 529.67 acres in the Bureau of Reclamation withdrawal on East Butte of the Sweet Grass Hills to mineral entry is part of this alternative. This would be a significant positive impact to the minerals industry because these lands have a high potential for the occurrence of gold and silver deposits. Opening these lands to mineral entry would allow exploration activities to more accurately assess the development potential of these lands, and would provide for the extraction of any economic deposits discovered.

TABLE 4.1
CONSTRAINTS ON OIL & GAS EXPLORATION & DEVELOPMENT (ALTERNATIVE A)¹

Management Categories	High Development Potential	Acres	Moderate Development Potential	Acres
1. Open Subject to Standard Terms and Conditions These are areas where standard terms and conditions are sufficient to protect other land uses or resource values.	Total subsurface acreage with high development potential minus acreage in Categories 2 and 3 below.	412,147	Total subsurface acreage with moderate development potential minus acreage in categories 2 and 3 below.	245,322
2. Open Subject to Seasonal or Other Minor Constraints These are areas where moderately restrictive lease stipulations (such as seasonal restrictions) may be required to mitigate impacts to other land uses or resource values.	* Kevin Rim * Sweet Grass Hills (East & West Buttes) area. * Crucial wildlife areas in the Havre RA. * Marias River area above Tiber Reservoir.	249,445	* Crucial wildlife areas in the Havre RA. * Marias River area below Tiber Reservoir.	94,440
3. Closed to Leasing, Discretionary These are areas where other land uses or resource values cannot be adequately protected even with the most restrictive lease stipulations. Appropriate protection can only be ensured by closing the lands to leasing.	* UMNWSR * WSAs	34,037	* UMNWSR * WSAs	86,076
¹ BLM, 1987	TOTAL HIGH 695,629		TOTAL MODERATE 425,838	

Impacts to Vegetation

Land Tenure Adjustment

A total of 44,143 acres of public land would be disposed of by exchange and/or the R&PP Act in this alternative.

Vegetation on acquired lands would experience minor benefits from land adjustment, which allows for improved resource management. There are currently about 8,000 acres of land within the central portion of the planning area that receive very little management attention. There is little opportunity to improve the vegetation on these lands because it's uneconomical due to small tract size. There are an additional 34,000 acres where vegetation improvement could be done but with marginal economic returns. Vegetation enhancement opportunities could be achieved by acquiring private inholdings, through exchange, within the remaining 584,000 public acres with high value resources.

The vegetation types having the most potential for improvement are the rose/snowberry, cottonwood/willow, non-wooded breaks, and riparian/wetlands. Improvement would be expected since these areas are also the most utilized.

Lands disposed of through sale or exchange may be partially or completely farmed which would destroy native vegetation. If disposal is by sale there could be a long-term reduction of native vegetation which would be a moderate impact. If disposal is by exchange, native vegetation acreage would increase or decrease depending on the exchange.

Because of the high ratio of acreage needed for many land exchanges, the total acreage of native vegetation may decrease.

Acquisition of private and state land in the Missouri River Corridor may include riparian habitat. The BLM would institute grazing management and could improve the riparian habitats on these areas.

An increase in noxious plants along roadways and disturbed soils on ROWs could occur, but only minor impacts would be expected.

Off-Road Vehicle Management

ORV use compacts vegetation and lowers soil productivity through soil compaction and erosion. However, this alternative would create only minor impacts to vegetation on a planning area wide basis.

The effects of ORV use on vegetation ranges from minor or short-term (1 growing season) to a significant long-term (more than 15 growing seasons) impact depending on how much vegetative compaction and soil erosion occurs. Damage to vegetation is amplified in sedimentary soils because of the unstable nature of these soils. The loss of vegetative cover on these soils would increase sedimentation and erosion. Under this alternative, ORV restrictions would benefit vegetation on sedimentary soils with greater than 30% slopes, and would allow minor vegetation damage on slopes less than 30% to continue.

Riparian vegetation can be significantly disturbed by ORV use. ORV tracks would remove vegetation on high moisture content riparian soil, exposing soils to potential erosion during high rainfall periods. There are approximately 2,997 acres of riparian vegetation that could be affected by ORV use.

Current ORV use levels have not significantly impacted vegetation, except on about 640 acres where a motorcycle group has made annual weekend trips. This use level has caused severe damage to vegetation on about 6 acres.

Right-of-Way Location

Impacts to vegetation resulting from ROW location would be minor. Common impacts would include physical trampling or removal of vegetation and indirect damage by increasing soil erosion and compaction. ROW activities would continue to be mitigated on sensitive areas such as riparian areas and sites that have sedimentary soils. These areas are the hardest to reclaim to natural vegetation.

Emphasis Areas

This alternative would have only minor impacts on vegetation within the Kevin Rim, Sweet Grass Hills or Cow Creek emphasis areas.

Upper Missouri National Wild and Scenic River Management

Ecological condition and trend would decline in localized areas around recreation facilities within the UMNWSR Corridor. This decline would result in soil compaction, erosion, and trampling. Native plant species would compete less favorably than more aggressive, less desirable plants such as noxious plants and others. Impacts could be locally significant if there is a large increase in visitor use.

Impacts to Wildlife and Fisheries

Land Tenure Adjustment

A total of 44,143 acres of public land would be disposed of by exchange and/or the R&PP Act in this alternative.

Wildlife values would decrease on disposed of public lands due to the possibility of farming these lands and decreasing yearlong wildlife habitat. Lands in mountainous terrain and steep breaks could not be farmed; therefore, those wildlife values would probably remain unchanged, although they would no longer be in federal ownership.

A decline in wildlife habitat through exchange or sale would not be as great in steep, broken terrain as on lands with level topography. The habitat value of approximately 750 acres of crucial winter antelope range; 424 acres of high value yearlong, and 2,640 acres of crucial spring sharptail grouse habitat; 1,900 acres of crucial spring/winter sage grouse habitat; 240 acres of crucial yearlong ring-necked pheasant habitat; 210 acres of crucial white-tailed deer habitat; 11,655 acres of high value, yearlong mule deer habitat; and one 39-acre unit containing wetlands would decline if all 44,143 acres would be disposed. Thus, land disposal through sale could have a moderate negative impact to wildlife since impacts would be long term.

The individual evaluation of each land action, the policy that exchange would be the preferred method of disposal, and that all exchanges would follow planning area criteria would result in a moderate positive benefit for wildlife resources because of the acquisition of high value wildlife lands. This would include crucial habitat such as riparian on the Missouri and Marias Rivers, big game winter range, wetland habitat, endangered species habitat in the Kevin Rim and Sweet Grass Hills etc. Land tenure adjustment would result in gains and losses for wildlife but the overall impacts would be minor.

Off-Road Vehicle Management

ORV use resulting from this alternative would have a minor affect on wildlife.

Habitat disturbance resulting from unrestricted ORV use would include compaction of vegetation needed for cover, food and rearing of young as well as social intolerance to human activity. Increased activity and human presence would cause short-term species movement from the area due to social intolerance. Approximately 20,000 acres of crucial winter antelope habitat would be disturbed by ORV use. Elk in the Missouri River Breaks would be disturbed. Approximately 35,000 acres of crucial sage grouse winter and spring habitat would be disturbed. About 25,500 acres of crucial sharp-tailed grouse habitat would be disturbed. Some minor disturbances to waterfowl, raptors, and non-game bird nesting would occur.

There would be no impacts to wildlife where limiting designations confine the public to existing roads and trails.

Right-of-Way Location

Most ROWs would cause minor disturbances to habitat and temporary wildlife harassment. ROW applications would continue at three to four per year within the planning area. Potential impacts to specific habitat types cannot be determined, since it is not known where future ROWs would occur. Impacts to wildlife can only be discussed in general terms.

ROWs would cause short-term harassment of most wildlife species and would cause temporary movement of species from the area. There would be a minor loss of habitat from most ROWs such as transmission pipe and telephone lines. ROWs through wetlands could disturb aquatic habitat by destroying fragile wetland vegetation, increasing sedimentation, and affecting annual runoff.

Emphasis Areas

Kevin Rim

Surface disturbing activities would result in significant negative impacts to nesting raptors. The current 1/4-mile radius protection zone does not protect sensitive raptors from visual and sound disturbances created by conventional mineral and oil-gas exploration-development actions under most terrain circumstances. Breeding and nesting activities would generally be disrupted, which may end in nest or territory abandonment.

Sweet Grass Hills

Although there may be one ROW application every 3 years that affects the area, there is a minor impact.

Hard rock mining negatively impacts big game through the loss of elk habitat and disruption of calving and wintering areas. Impacts are minor from a small operation. However, a large open pit type operation may create a significant, long-term loss of big game habitat.

Present mining and oil-gas activities are limited in the area so negative impacts to wildlife resources are minor. Surface disturbance activities could negatively impact raptor nest sites by disrupting nest construction, premature nest abandonment and increased harassment.

Cow Creek

About 220 acres of crucial mule deer habitat exists in the Cow Creek area. This acreage should remain about the same with current management. Riparian areas are principally decadent cottonwood stands and are of limited value to non-game. Past beaver activity is evident in some areas however, no beaver population is presently known to occur.

Wildlife populations would remain about the same. Current allotment grazing is designed for proper use. As a result, mule deer, sharp-tailed grouse and non-game species habitat is available. However, with current warm season grazing, riparian habitat could be expected to deteriorate over time until existing cottonwood trees are dead. Little or no seedling regeneration would occur.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Public or private recreation management would have little direct impact on wildlife resources. A minor impact to wildlife could occur from increased harassment, causing short-term displacement and minor habitat damage in and around campsites if recreational activities increase on the river.

Facility Management

Short-term displacement and minor habitat damage would occur. Facility management activities would have a minor impact on wildlife resources.

Concession Management

Wildlife values would be reduced proportionate to the degree of human activity (concessions) development. There would be minor impacts to wildlife resources.

Impacts to Grazing Management

Land Tenure Adjustment

A total of 44,143 acres of public land would be disposed of by exchange and/or the R&PP Act in this alternative.

Many of the tracts identified under the State Director's Guidance for disposal are small tracts of less than 640 acres, surrounded by private land, resulting in limited livestock management opportunities. Management opportunities could be greatly enhanced if these tracts would be used to acquire private land in areas of predominately public land. These opportunities would include acquisition of tracts with range improvement potential such as water developments, spring pasture developments, and consolidation of public landownership in a pasture and/or allotment. Moderate positive benefits to grazing management would result from continuance of the No Action Alternative.

Off-Road Vehicle Management

Negative impacts from ORV use in areas designated open to ORV use would include physical damage to native vegetation, an increase in habitat potential for noxious plants on disturbed roadways, livestock harassment, compacted soil, and resultant encouragement of new vehicle trails on public land. The majority of the ORV use occurs from grazing lessees, oil-gas operations and hunters. These uses would continue without ORV restriction. Minor negative impacts could continue unabated under this alternative.

Increased public access to recreation areas could increase fence and cattleguard maintenance.

Restricted ORV use in limited areas would allow livestock operators and other authorized permittees to use limited areas only on a case-by-case basis when permitted by BLM.

Rights-of-Way

Minor vegetative impacts to grazing could result because of an increase in noxious plant habitat due to ROW disturbance of soils and vegetation. A minor negative impact would result.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

This alternative would have only minor impacts on grazing in the Kevin Rim and Sweet Grass Hills areas.

Cow Creek

The inclusion of riparian management objectives in the five existing allotment management plans (AMPs) would probably entail construction of livestock enclosures on a temporary basis (4-10 years) to allow cottonwood and willow establishment. Approximately 100 acres along Cow Creek would be subject to enclosures. This would exclude about 33-50 AUMs of grazing forage from livestock use. This forage would be lost over time and unavailable for livestock use. This would be a minor negative impact to vegetation.

Upper Missouri National Wild and Scenic River Management

Increased livestock management activity would be necessary if any of this alternative would be implemented. The increased intensity would take the form of developing riparian pastures and using them in a manner to favor riparian vegetation. This would require more intensive livestock management.

Impacts to Cultural Resources

Land Tenure Adjustment

The BLM State Director's Guidance identifies 44,143 acres of BLM administered land to be disposed of through exchange and/or the R&PP Act. The mean site density for the region is roughly one archeological site per 110 acres. If all tracts are disposed of, the BLM could lose about 430 sites of varying significance or value. About 20%, or 86 sites, would be of sufficient value (eligible for the National Register of Historic Places) to warrant retention. There could also be a number of sites on the lands that BLM would acquire, which would presumably be of equal value, thus the overall adverse impacts would be minor.

Land exchanges and acquisitions would have a beneficial effect on cultural resources where more valuable historic or archaeological sites would be acquired than disposed of. Lands with significant cultural resources should receive a high priority for acquisition (see Appendix 1.1).

Off-Road Vehicle Management

ORV impacts to cultural resources are primarily caused by erosion resulting from concentrated vehicle traffic for an extended time. In areas where travel is restricted to roads and trails, there would be no greater impact to archaeological or historical sites than is now occurring. In areas where travel is open, a number of sites could be affected for the first time. There is no way to estimate the quantity of impacts since BLM has not inventoried much of the land in the principal ORV areas (Missouri River Breaks).

It is likely that some sites would be impacted and due to the irreplaceable nature of cultural resources this could result in a moderate long-term local impact.

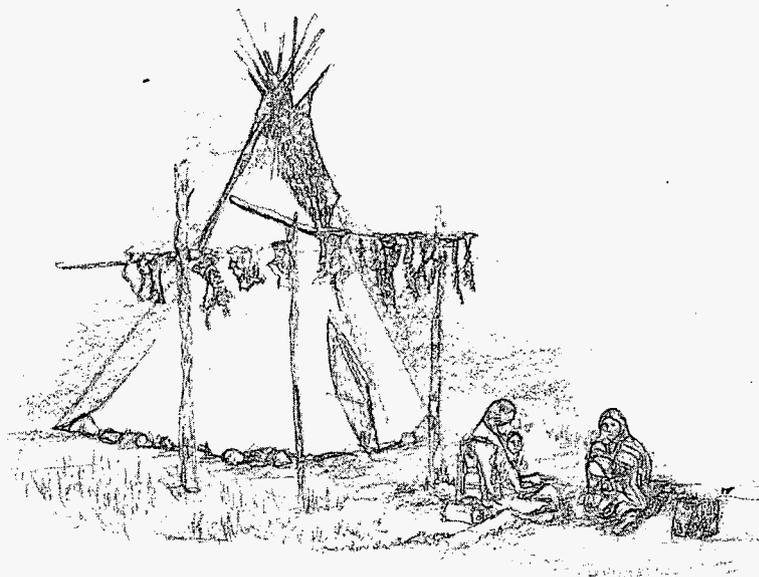
Right-of-Way Location

Physical impacts to cultural resources are usually avoided by rerouting rights-of-way, but the practice can have economic repercussions. The alternative of mitigating sites can also be costly. Another set of costs is associated with survey for cultural resources in new rights-of-way. However, impacts are minor because mitigation is always done.

Emphasis Areas

Kevin Rim

This alternative requires current uses and management practices to continue. While project relocation has been a successful procedure in avoiding impacts to significant cultural resources in the past, it may not be so in the future. This is due to a high site density (about one per 70 acres) and because of dwindling space for new oil-gas developments. It is estimated that there are 70 sites on the public lands and another 270 sites on public mineral estate. If the well spacings are standardized at 10 acres or less, there is about a 15% chance that a site would be encountered, and possibly affected since the space to move the well facilities is limited. The problem is more acute along the Kevin Rim escarpment, where proper space to move is even more restricted and where the most important archeological sites occur. This would be a moderate negative impact to the local area.



Sweet Grass Hills

This alternative calls for the continuation of current uses with a reactive management policy; that is, no active management takes place unless someone proposes to use the resources in the Sweet Grass Hills. Presently there is no accurate estimate of the number and variety of cultural resources in the area because very little inventory work has been undertaken. However, it is very probable that all the higher peaks have at least one Native American religious site on them, which may be modern, historic, or even prehistoric in age. These sites are particularly susceptible to the audio and visual intrusions, owing to their geographical nature. Continued mining and other development in the area would seriously alter the solitude of the surrounding environs; making a religious experience difficult to obtain. These impacts could be long term and cumulative, so are considered moderate. Impacts to historic and prehistoric resources from the same activity are only considered minor because of required mitigation.

Reopening 529.67 acres to mineral entry on East Butte could lead to audio and visual intrusions resulting from mineral exploration and development. These intrusions would seriously impair the solitude of East Butte, making it difficult for the Blackfeet, Chippewa, Cree and Gros Ventre tribes to obtain a traditional religious experience. Mining activity would also disturb historical and archaeological sites, though not as severely as religious sites, since these are more easily avoided.

Cow Creek

This alternative would have only minor impacts on cultural resources since current oil and gas development in the area is minimal. The most important cultural resource is the historic Nez Perce Trail, the remains of which are not visible on the land. Present use by livestock and oil-gas developers does not seriously detract from the historic setting of the trail.

Upper Missouri National Wild and Scenic River Management

Facility Management

Developments proposed in this alternative, depending on where they would occur, may affect cultural resources by increasing visitor traffic or constructing facilities. The effect may be physical disturbance, theft, or the introduction of visual intrusions into a historic scene.

Concession Management

Developments in this alternative may affect cultural resources depending on where they would be located. The impacts may be physical disturbance from construction activity and visitor traffic, or the introduction of visual intrusions that are out of character with historic settings. Most impacts can be avoided by careful planning and placement of the developments.

Health and Safety

Cultural resources may benefit from the presence of the BLM river management staff (rangers) on the river because vandalism and theft of artifacts may be reduced.

Impacts to Recreation

Land Tenure Adjustment

A total of 44,143 acres of public lands would be disposed of by exchange and/or the R&PP Act in this alternative.

About 10,640 acres of scattered public land with public access would be disposed of. The largest tract with public access lost in this alternative would be 640 acres. The maximum overall loss of public access lands would be 2% if no new public access is acquired through exchange. The recreation value of those public lands is limited to occasional hunting. These impacts would be minor.

Land adjustments would provide a multitude of significant positive benefits. Access would be provided to a number of important areas so users can maximize each area's recreational values. These areas generally include the Missouri and Marias Rivers, the WSAs, the Sweet Grass Hills, important fishing reservoirs and hunting areas, etc. Some of the public lands would be consolidated so the recreational values are better protected or enhanced. In addition, a more defineable federal land pattern would reduce confusion for recreational users.

Off-Road Vehicle Management

ORV use is primarily associated with BLM administration, hunting, ranching, and oil-gas exploration/development. These users generally stay on existing roads and trails. The planning area is not a high-use area and ORV disturbances are infrequent. There is infrequent motor bike club use of BLM administered land. ORV impacts to recreation would be minor.

Approximately 80% of the area would remain open to ORV use. This would be a positive benefit to ORV users. It would be a negative impact on steep terrain that has primitive values such as in the Sweet Grass Hills and the Marias River since additional ORV trails would be established over time. This impact would be minor because most of the public land in these areas does not have public access.

Rights-of-Way Location

Unrestricted location of ROW would create minor impacts to recreation through the life of this plan. However, the impacts to recreation would be most noticeable in the UMNWSR Corridor.

Emphasis Areas

Sweet Grass Hills

The visual quality of the area, particularly of the East Butte area, could be reduced by mining, oil-gas activities and road building. The primitive character of the area might be reduced if these activities would accelerate. This would be in non-conformance with VRM objectives.

Cow Creek

Management of this area would not be given special attention.

Upper Missouri National Wild and Scenic River Management

Visitor Services

If BLM continues to manage BLM campgrounds, it would provide safe/sanitary, primitive visitor conditions.

Continuance of cooperative agreements with the State of Montana would provide better coverage of sites, build better river rapport between BLM and the state and permit BLM to provide greater capabilities through the river ranger staff. A negative feature would be some duplication of efforts.

Continued operation of the Fort Benton Visitor Center by BLM would provide greater river user safety, resource protection, interpretation, public information, maintain a good rapport with local community, and provide a base of operations for search-rescue. Some negative features would be shifting of the river management capability to this facility.

The operation of ranger stations at Coal Banks and Judith Landing during the management season would improve visitor contact, provide emergency locations, and locations for site operations. Operation of these sites would require a budget which has direct bearing on BLM's capacity elsewhere on the river.

Livestock in recreation sites areas would remove understory such as rose, which would provide better tent sites. Some negatives would be more and greater visitor-livestock conflicts, increased sanitary problems from livestock manure and flies, loss of wildlife habitat, loss of riparian communities, and continued exposure of public to potentially troublesome or dangerous livestock.

Health and Safety

The current cooperative effort with the county provides rapport and coordinated search and rescue and support in law enforcement. A negative feature of this practice is that search and rescue costs strain budgets and current staff.

IMPACTS TO SOCIAL AND ECONOMIC CONDITIONS

Land Tenure Adjustment

A total of 44,143 acres of public lands would be disposed of by exchange and/or the R&PP Act in this alternative.

Land exchanges would tend to block up BLM administered lands making them easier to manage.

The holder of a grazing lease and/or the adjacent landowner on a tract identified by BLM for disposal could be offered the opportunity to acquire it through exchange. The ability of the lessee or adjacent landowner to participate can vary widely and there is a potential for minor adverse impacts to some ranch operations through loss of the leased area.

County governments would experience some effect on payment in lieu of taxes (PILT) if public lands in their counties are exchanged for lands in another county. The net fiscal effects on local governments would depend on whether the land adjustment is with private landowners or state and local governments. Fiscal effects would also depend upon whether exchanges are largely within or between counties and how the property taxes on lands passing into private ownership compare with the level of PILT. Tax exempt lands acquired from state or local governments through exchanges would be excluded from PILT. However, this loss of revenue to the counties could be partially offset by lands acquired by the state which might be subject to State Equalization Payments. Landownership transactions under Alternative A could result in the disposal of 44,135 acres of public lands. The exchange of public lands for private and/or state lands would have a minor net fiscal effect on PILT, State Equalization Payments and annual county property tax revenues. The net fiscal effect would depend on whether the land adjustment is with private landowners or state and local governments. Additional analysis of impacts will be necessary when specific land adjustment tracts are identified.

Off-Road Vehicle Management

Limiting travel to existing roads and vehicular ways in WSAs and certain areas with sedimentary breaks soils (slopes greater than 30%) could require affected ranch operations to substitute horses or foot travel for casual vehicle use, thereby increase management costs. Access maintained in all other areas for recreation, ranching and mineral activities has not curtailed the opportunity to open an area for resource development. There would be no change in the current economic or social conditions.

Rights-of-Way

All areas open to rights-of-way location would be available for development of transmission lines or communication sites. There would be no change in the current economic and social conditions.

Emphasis Areas

Kevin Rim

Grazing, recreation, oil-gas, mineral and other resource development would continue in the Kevin Rim area. The current 1/4 mile buffer zone around active raptor or peregrine nest sites would have minimal restrictions for resource development and subsequently the associated economic benefits. There would be no change in current economic and social conditions.

Sweet Grass Hills

Grazing, recreation, oil-gas, mineral and other resource development would continue in this area. Revoking the Bureau of Reclamation withdrawal on 529.67 acres and opening the area to mineral entry to East Butte would offer more opportunities for mineral resource exploration and development. Mineral exploration would offer very limited employment and income opportunities for the local economy. If exploration leads to mineral development, the local economy would benefit from long-term employment and income opportunities. Benefits from hardrock mining could be partially offset by curtailing some recreation use and the associated benefits to the local economy. Hunting is prominent in the lifestyle of many area residents and this use of the Sweet Grass Hills is important to these people.

The practice of traditional religion by Native Americans has caused some concern regarding changing the character of the area by mineral exploration and/or development. The area offers the pristine qualities and solitude that are required for these religious practices which are important to Native Americans in maintaining their traditions and culture. Exploration and mining in the Sweet Grass Hills would seriously alter the solitude of the surrounding environment, making a religious experience difficult to obtain. This management action could cause a significant change in the solitude and undisturbed environment of this area for Native Americans who use it for religious purposes.

Cow Creek

Grazing, recreation, oil-gas, mineral and other resource development would continue. There would be no change in current economic and social conditions.

Upper Missouri National Wild and Scenic River Corridor

Continuing to manage the UMNWSR Corridor under special management guidelines would not change current economic and social conditions. Hunting, fishing and other recreation use in the area is expected to increase in the short and long term, with existing outfitters and guides receiving additional income over time. Currently, permitted outfitters offer services along the river, ranging from fully outfitted and guided trips to basic canoe services. In addition, two companies in Fort Benton utilize large pontoon craft. The local economy would benefit from an increase in expenditures for recreation services (motels, service stations, restaurants, etc.) but these changes will only have a minor impact to the local economy.

IMPACTS OF ALTERNATIVE B

Impacts to Soils

Land Tenure Adjustment

A total of 50,092 acres of public land would be disposed of by sale, the R&PP Act and/or exchange in this alternative.

Some disposed of tracts would have native vegetative cover plowed to cultivate agricultural crops, resulting in increased wind and water erosion. Acquisition of private land in areas of high resource interest would stabilize soils by increasing vegetative cover.

Off-Road Vehicles

Off-road vehicles lower the natural productivity of soil through compaction and increased wind and water erosion. The soils of the Missouri Breaks (soil subgroups 3, 4, 5, and 16) and sedimentary soils (see Appendix 2.5) along glaciated prairie drainages can be significantly impacted by ORVs due to sandy or clayey textures, high erodibility factors and slopes greater than 25%. The significant impact rating is due to water erosion, especially rill and gully erosion, and wind erosion on sandy areas. These impacts are caused by vehicular travel, both on and off roads and trails. These impacts are compounded by vehicular travel on wet soils. During dry periods, increased wind erosion would result in a locally significant impact. Even limited ORV use on fragile soils would generally cause a drastic reduction in soil productivity and values.

There is the potential for locally significant impacts to soils in riparian zones in the form of streambank instability. ORV use would break down banks and increase wind and water erosion of these areas.

This alternative limits vehicular use to existing roads and trails on 32,000 acres. There could be locally significant negative impacts from vehicular use of existing roads and trails.

An additional 285,190 acres of sedimentary breaks soils would be open to ORV use. Locally significant impacts, both on and off existing roads and trails, would occur in this area. Within this area is a 640 acre area which would be designated for intensive use by cross-country motorcycle activities. This use would continue to denude portions of the area of native vegetation increasing wind and water erosion in the area.

The remainder of the planning area, 304,908 acres, is open to ORV use. Impacts in these areas are expected to be minor and short term.

Right-of-Way Location

Impacts from ROW facilities are usually associated with construction activities. Areas with high erosion susceptibility, shallow soils, steep slopes (greater than 25%), sparse native vegetation, and known slumping or mass wasting areas would have locally significant impacts from any surface disturbing activity. This alternative has the potential for locally significant impacts in areas normally recognized as ROW avoidance areas as described above.

There are approximately 100,000 acres of sedimentary breaks type soils which have slopes greater than 25% that are difficult and expensive to rehabilitate after disturbance. Where ROW facilities are located on these steep fra-

gile soils there is a potential for the mitigative measures to fall short of rehabilitation goals and for locally significant long-term impacts to occur.

The potential for these impacts would be reduced on approximately 28,000 acres within the UMNWSR Corridor. However, these impacts could still occur on 72,000 acres of sedimentary breaks soils including the ROW windows within the river corridor.

Impacts to soils, from ROW location, in areas other than sedimentary breaks type soils, would be minor and short term.

Emphasis Area Management

All impacts would be the same as those described in Alternative A.

Upper Missouri National Wild and Scenic River Management

Facility Management

Development of recreation facilities along the Missouri River would reduce streambank stability, cause soil compaction and reduced vegetative cover as a result of human traffic at these facilities.

Impacts would be locally moderate within the UMNWSR Corridor but minor to the entire planning area.

Impacts to Water

Land Tenure Adjustment

A total of 50,092 acres of public land would be disposed of by sale, the R&PP Act and/or exchange in this alternative.

Some disposed of tracts would have native cover plowed to cultivate agricultural crops, resulting in a minor increase in erosion and sedimentation of streams and reservoirs below these areas.

Acquisition of land in areas of high resource interest would benefit watershed values by increasing vegetative cover.

Off-Road Vehicles

ORV use impacts occur as vegetation and ground cover are removed. The bare soil in the ruts and trails left by ORVs is exposed to rill, gully and wind erosion; resulting in accelerating headcut advancement and deepening ruts. Sediment eroded from these ruts and trails is redeposited in downstream pools and reservoirs, thereby altering stream channels and shortening the life expectancy of water impoundments. Water quality is also lowered by increased sediment concentration.

The impacts of ORV use are especially evident on sedimentary breaks type soils (soil subgroups 3, 4, 5, and 16; see Appendix 2.5) and on other soils with slopes greater than 25%. The impacts are compounded even further when these soils are wet.

Impacts also occur to riparian zones as streambank stability is reduced. Wind and water erosion would increase and water quality would decrease.

This alternative limits vehicular use to existing roads and trails on 32,000 acres. Locally significant impacts could occur on these existing roads and trails, especially during wet periods. Vehicles maneuver around rutted areas and potholes, widening existing roads and exposing more soils to potential erosion.

An additional 285,190 acres of sedimentary breaks type soils would be open to ORV use. Locally significant impacts, both on and off existing roads and trails, would occur. Within this area, a 640 acre parcel would be designated as an intensive ORV use area. Wind and water erosion would greatly increase as vegetation and ground cover is destroyed.

The remainder of the planning area, 308,908 acres, would be open to ORV use. These areas contain more suitable soils and less steep terrains and would experience only minor, short-term impacts.

Damage caused by ORV use could be reclaimed on areas with suitable soils and flatter slopes simply by restricting use until natural revegetation occurs. Other areas, such as extensive use areas, sedimentary breaks type soils and areas with slopes greater than 25% may require mechanical treatment and seeding in addition to restricted of ORV use. Some areas may not respond to reclamation in the short term and accelerated wind and water erosion would persist into the long term.

Right-of-Way Location

Water quality impairment from ROW facilities is usually associated with construction, is short term and generally reclaimable. In areas of sedimentary breaks type soils that have slopes greater than 25% (approximately 100,000 acres), ROW facility location has the potential for locally significant impacts to water resources due to runoff, erosion and sedimentation.

The potential for these impacts would be reduced by 28,000 acres within the UMNWSR Corridor. However, these impacts could still occur on 72,000 acres of sedimentary breaks soil and on the ROW windows within the corridor.

Emphasis Areas

All impacts would be the same as those described in Alternative A.

Upper Missouri National Wild and Scenic River Management

Facility Management

Pit type toilets would only be located where the bottom of the pits would be at least 10 feet above the water table. This would greatly reduce the potential for contamination of groundwaters. Streambank stability could be impacted at facility locations, however, the anticipated impacts would be minor and varied with the number of new facilities.

Impacts to Mineral Resources

Table 4.2 details the constraints on oil and gas development under this alternative.

Land Tenure

A total of 50,092 acres of public land would be disposed by exchange, the R&PP Act and/or sale in this alternative.

Lands considered for exchange would have their mineral character and potential evaluated, increasing the knowledge of mineral resources on these lands. Separation of federal minerals from surface would complicate and increase the cost of development of minerals. These are minor in terms of overall impact on lands action. If BLM acquires federal minerals in areas managed under more stringent surface constraints (such as in WSAs), it could create a locally moderate impact to oil and gas development.

Off-Road Vehicle Management

There would be a minor negative impact to mineral resources in WSAs from the limited designation.

A minor positive impact for mineral development would result from opening more of the planning area to unlimited cross-country ORV travel.

Right-of-Way Location

Costs to develop new pipelines across the Upper Missouri National Wild and Scenic River would increase, because location of the pipeline would have to coincide with identified corridors. This would be a minor negative impact.

Emphasis Areas

Kevin Rim

Observing a 1/4-mile buffer zone around active raptor nesting sites could cause a minor impact to oil-gas exploration and development by requiring work to be delayed or routed differently.

Sweet Grass Hills

Opening 529.67 acres in the Bureau of Reclamation withdrawal on East Butte to mineral entry would occur under implementation of this alternative. This would be a significant positive impact to the minerals industry because of the high potential for the occurrence of gold and silver deposits. Opening these lands to mineral entry would allow exploration activities that would more accurately access the development potential of these lands, and would provide for the extraction of any economic deposits discovered.

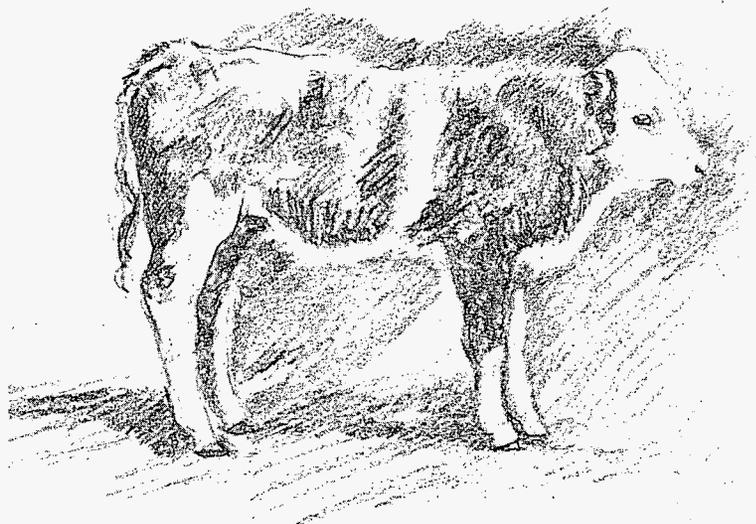


TABLE 4.2
CONSTRAINTS ON OIL & GAS EXPLORATION & DEVELOPMENT (ALTERNATIVE B)¹

Management Categories	High Development Potential Acres	Moderate Development Potential Acres
1. Open Subject to Standard Terms and Conditions These are areas where standard terms and conditions are sufficient to protect other land uses or resource values.	Total subsurface acreage with high development potential minus acreage in categories 2 and 3 below. 411,618	Total subsurface acreage with moderate development potential minus acreage in categories 2 and 3 below. 245,322
2. Open Subject to Seasonal or Other Minor Constraints These are areas where moderately restrictive lease stipulations (such as seasonal restrictions) may be required to mitigate impacts to other land uses or resource values.	* Kevin Rim area * Sweet Grass Hills (East & West Buttes) area plus the 529 acre withdrawal revocation on East Butte * Crucial wildlife areas in the Havre Resource area * Marias River area above Tiber Reservoir 249,974	* Crucial wildlife areas in the Havre Resource Area * Marias River area below Tiber Reservoir 94,440
3. Closed to Leasing Discretionary These are areas where other land use or resource values cannot be adequately protected even with the most restrictive lease stipulations. Appropriate protection can only be ensured by closing the lands to leasing.	* UMNWSR * WSAs 34,037	* UMNWSR * WSAs 86,076
	TOTAL HIGH 695,629	TOTAL MODERATE 425,838

¹BLM, 1987

Impacts to Vegetation

Land Tenure Adjustment

A total of 50,092 acres of public land would be disposed of by sale, the R&PP Act and/or exchange in this alternative.

Improved management on blocked-up areas would improve vegetative condition, especially for rose/snowberry, cottonwood willow, non-wooded breaks and riparian/wetland vegetation types. These vegetation types are the most likely to have water sources within them, and hold the greatest potential for improvement through management. However, only minor improvement would be expected, since these areas are also the most utilized. Disposal of scattered parcels would eliminate opportunities for vegetative management on these parcels, many of which could be converted from native vegetation to other vegetative types in private ownership. This would result in moderate negative impacts over the long term when disposal is by sale.

Off-Road Vehicle Management

This alternative would create only minor impacts to vegetation on a planning area wide basis, even though ORV use compacts vegetation and lowers soil productivity, on which plants depend.

Open ORV use on sedimentary soils of over 30% gradient would damage vegetation and indirectly increase soil erosion. Growing conditions for noxious plants would improve in areas where plant communities may be destroyed or disturbed.

Identification of an intensive ORV use area would completely eliminate vegetation on about 20 acres. A slight

increase in compaction of vegetation would occur in other heavy use areas. Short-term, non-repeating ORV use may aid in establishing more preferred species such as western wheatgrass on blue grama ranges by destroying the blue grama.

Rights-of-Way Location

Impacts to vegetation resulting from ROW location would be minor. Common impacts would include physical trampling or removal of vegetation and indirect damage by increasing soil erosion and compaction. Damage to vegetation in the UMNWSR Corridor would be limited to the identified windows. Damage would consist of physical trampling or removal of vegetation and indirect damage by increasing soil erosion and compaction. Conditions favoring the growth of noxious plants would increase.

Emphasis Areas

This alternative would have only minor impacts on vegetation within the Kevin Rim, Sweet Grass Hills or Cow Creek emphasis areas.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Ecological condition and trend would decline in localized areas around recreation facilities within the UMNWSR Corridor. This decline would result in soil compaction, erosion, and trampling and an increased proportion of noxious plants. Impacts could be locally significant if there is a large increase in visitor use.

Impacts to Wildlife and Fisheries

Land Tenure Adjustment

A total of 50,092 acres of public land would be disposed of by sale, the R&PP Act and/or exchange in this alternative.

Land tenure adjustments under this alternative would create both moderate positive and negative impacts to wildlife.

Lands acquired under this alternative would have the same positive impacts as those discussed in Alternative A. Disposal of scattered tracts would result in more habitat for tolerant, agricultural based species and less habitat for species requiring a less disturbed setting. A monoculture could become more prevalent if disposed of lands are farmed. This type of habitat would have lower species diversity and would be unable to fully support food and cover requirements for most species. Impacts would be reduced by the inability to till those tracts in rough, steep terrain.

Wildlife habitat on the 50,092 acres available for disposal includes: approximately 7,340 acres of crucial mule deer habitat; 405 acres of crucial antelope winter habitat; 200 acres of crucial ring-necked pheasant habitat; 1,210 acres of crucial spring sharp-tailed grouse; 730 acres of crucial winter/spring sage grouse habitat; and a 39 acre tract.

If the 50,092 acres are disposed through sale the 9,885 acres of crucial habitat described above would be lost; this would be a moderate negative impact. However, if land adjustment is accomplished through exchange, a moderate positive impact could occur through acquisition of wildlife habitat.

Off-Road Vehicle Management

Moderate impacts to wildlife would result from ORV use under this alternative. Impacts would be greater under this alternative than the others because ORV restrictions would be minimal.

Opening 238,000 acres of sedimentary breaks soils (Missouri Breaks) to ORV use would result in habitat deterioration through trampling, and indirect damage to habitat through soil compaction and disturbance, which would lower plant vigor. Wildlife species would also be stressed as a result of social intolerance to human activity. Mule deer would be the primary species affected.

Impacts to wildlife, resulting from identification of an intensive ORV use area, would be minor. Mule deer and raptors would be displaced during periods of frequent ORV use. Less than 1% of the wildlife forage and cover in the affected area would be lost. Some disturbance would occur to nesting birds.

Right-of-Way Location

Impacts to wildlife resulting from ROW location under this alternative would be minor, short term and localized.

Restricting new ROWs within the UMNWSR Corridor to identified windows would discourage infringement on 6,200 acres of crucial mule deer habitat. This would maintain existing wildlife habitat and reduce the levels of human activity.

Emphasis Areas

Kevin Rim

Surface disturbing activities would result in significant negative impacts to nesting raptors. The current 1/4-mile radius protection zone does not protect sensitive raptors from visual and sound disturbances created by conventional mineral and oil-gas exploration-development actions under most terrain circumstances. Breeding and nesting activities would generally be disrupted, which may end in nest or territory abandonment.

Sweet Grass Hills

Although there may be one ROW application every 3 years that affects the area, there is minor impact.

Hard rock mining negatively impacts big game through the loss of elk habitat and disruption of calving and wintering areas. Impacts are minor from a small operation. However, a large open pit type operation may create long-term significant impacts to wildlife through the loss of habitat.

Present mining and oil-gas activities are limited in the area so negative impacts to wildlife resources are minor. Surface disturbance activities could negatively impact raptor nest sites by disrupting nest construction, promoting premature nest abandonment and increased harassment.

Cow Creek

About 220 acres crucial mule deer habitat exists in the Cow Creek area. Riparian areas are principally decadent cottonwood stands and of limited value to non-game. Past beaver activity is evident in some areas however, no beaver population is presently known to occur.

Wildlife populations would remain about the same. Current allotment grazing is designed for proper use. As a result, mule deer, sharp-tailed grouse and non-game species habitat is available. However, with current warm season grazing, riparian habitat could be expected to deteriorate over time until existing cottonwood trees are dead. Little or no seedling regeneration would occur.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Public or private recreation management would have a minor overall impact on wildlife. Extending maintenance of BLM campground... facilities to a 6 month season would increase the number of hunters in the UMNWSR Corridor, creating additional disturbance to wildlife and associated habitat.

Facility Management

Facility management activities would create only minor impacts to wildlife resources.

Concession Management

Concession facilities along the Upper Missouri would increase the number of hunters and fishermen using the river and increase use of riparian areas. This would create additional disturbance to wildlife and associated habitat. Impacts would be minor.

Impacts to Grazing Management

Land Tenure Adjustment

A total of 50,092 acres of public land could be disposed of by sale, the R&PP Act and/or exchange in this alternative.

Exchange of small isolated tracts of public land for private inholdings would create a moderate positive impact. It eliminates management of small acreage allotments which are uneconomical to manage and concentrates federal acreage which improves management opportunities. Disposal of lands by sale would eliminate the potential of improved grazing management opportunities. A total of 50,092 acres could be lost as trading stock for high value range resources. This would create moderate negative impact.

Off-Road Vehicle Management

ORV use on slopes over 30% gradient within watersheds would increase sedimentation in reservoirs below these areas and would damage livestock forage.

About 20 acres of forage would be severely impacted under projected use (about two to four AUMs). Some harassment of livestock may occur on a temporary basis each year.

Overall, ORV impacts to grazing would be minor under this alternative.

Right-of-Way Location

Providing windows through the UMNWSR Corridor would limit ROW disturbance to livestock forage to only these windows. Forage disturbance resulting from ROW location would include the total elimination of forage in small areas and trampling of forage on a more widespread basis. Disturbance to soils and vegetation would increase erosion, lower forage productivity and increase the potential for noxious plants. Impacts would be minor because rehabilitation stipulations are required in ROW grants.

Emphasis Areas

This alternative would have only minor impacts on grazing within the Kevin Rim and Sweet Grass Hills emphasis areas.

Cow Creek

The inclusion of riparian management objectives in the five existing AMPs would probably entail construction of livestock enclosures on a temporary basis (4-10 years) to allow cottonwood and willow establishment. Approximately 100 acres along Cow Creek would be subject to enclosures. This would mean about 33-50 AUMs of grazing forage excluded from livestock use. This forage would be lost over time and unavailable for livestock use. This would be a minor negative impact to vegetation.

Upper Missouri National Wild and Scenic River Management

Visitor Services

There is a potential for livestock harassment, resulting in disrupted grazing patterns. Livestock could be forced to avoid shaded areas used for rest, resulting in diminished weight gains. Overall impacts would be minor and localized.

Impacts to Cultural Resources

Land Tenure Adjustment

This alternative would result in the disposal of 50,092 acres of scattered tracts. Approximately 440 cultural resource sites of varying significance would be lost. Approximately 20% of these, or 88 sites, would be of sufficient value (eligible for the National Register of Historic Places) to retain the lands on which they are located.

Land exchanges and acquisitions would result in a beneficial impact to cultural resources, if the lands acquired in exchange have more valuable historic or archaeological sites. The acquired sites would be provided greater protection in federal ownership because of laws and regulations. Lands with significant cultural resources should receive a high priority for acquisition.

Off-Road Vehicle Management

ORV impacts to cultural resources are caused primarily by erosion resulting from concentrated vehicle traffic for an extended time. In areas where travel is restricted to roads and trails (such as WSAs), there would be no greater impact to archaeological or historical sites than is now occurring. In areas where travel is open, a number of sites could be affected for the first time. However, there is no way to estimate the quantity of impact since BLM has not inventoried much of the land in the principal ORV areas (Missouri Breaks).

It is likely that some sites would be impacted and due to the irreplaceable nature of cultural resources, this could result in a moderate long-term local impact.

Right-of-Way Location

Random development of ROWs, outside the UMNWSR Corridor, would continue to disturb or destroy all or part of some historic and archaeological sites and alter their settings or visual environments. Overall impacts would be minor since these sites can usually be avoided. Limiting lineal ROWs through the UMNWSR Corridor to designated windows, would allow a more thorough inventory of cultural resources by limiting disturbance to fewer areas. Fewer cultural clearances would be needed as ROWs would utilize the same windows.

Emphasis Areas

Kevin Rim

This alternative requires current uses and management practices to continue, subject to standard stipulations. While project relocation has been successful in avoiding impacts to significant cultural resources in the past, it may not be so in the future. This is due to a high site density (about one per 70 acres) and dwindling space for new oil-gas developments. It is estimated there are 70 sites on the public lands and another 270 sites on public mineral estate. If the well spacings are standardized at 10 acres or less, there is about a 15% chance that a site would be encountered, and possibly affected since the space to move the well facilities is limited. The problem is more acute along the Kevin Rim escarpment proper, where space to move is even more restricted and where the most important archaeological sites occur. This would be a moderate negative impact to the local area.

Sweet Grass Hills

This alternative calls for continued current uses with a reactive management policy; that is, no active management takes place unless someone proposes to use the resources in the Sweet Grass Hills. Presently, there is no accurate estimate of the number and variety of cultural resources in the area because very little inventory work has been undertaken. However, it is very probable that all the higher peaks have at least one Native American religious site on them which may be modern, historic, or even prehistoric in age. These sites are particularly susceptible to the audio and visual intrusions, owing to their geographical nature. Continued mining and other development in the area would seriously alter the solitude of the surrounding environs, making a religious experience difficult to obtain there. These impacts could be long term and cumulative so are considered moderate. Impacts to historic and prehistoric resources from the same activity are only considered minor because of required mitigation.

Reopening 529.67 acres to mineral entry on East Butte could lead to audio and visual intrusions resulting from mineral exploration and development. These intrusions would seriously impair the solitude of East Butte, making it difficult for the Blackfeet, Chippewa, Cree and Gros Ventre tribes to obtain a traditional religious experience. Mining activity would also disturb historical and archaeological sites, though not as severely as religious sites, since these are more easily avoided.

Cow Creek

This alternative would have only minor impacts on cultural resources since current extractive use of the area is minimal. The most important cultural resource is the historic Nez Perce Trail, the remains of which are not visible on the land. Present use by livestock and oil-gas development does not seriously detract from the historic setting of the trail.

Upper Missouri National Wild and Scenic River Management

Visitor Services

This alternative would have only minor impacts on cultural resources. The potential always exists for recreational users to damage cultural resources both intentionally and unintentionally. However, continuance of river patrols and other enforcement activity along with improved public knowledge of the nature of cultural remains, via development of interpretive sites, would make the impacts minor.

Impacts to Recreation

Land Tenure Adjustment

A total of 50,092 acres of public land would be disposed of by sale, exchange and or the R&PP Act in this alternative.

Land adjustments would provide a multitude of significant positive benefits. Access would be provided to a number of important areas so users could maximize each area's recreational values. These areas generally include the Missouri and Marias Rivers, the WSAs, the Sweet Grass Hills,

the Kevin Rim, Congressionally designated trails, important fishing reservoirs and hunting areas, etc. Some of the public lands would be consolidated so the recreational values would be better protected or enhanced. In addition, a more definable public land pattern would reduce confusion for recreational users.

Disposal of lands would result in visual impairment to these lands since various structures and land practices could be applied. Overall, these impacts would be minor compared to the large land base of public lands. Acquisition of lands in areas of higher resource values would aid in maintaining visual quality by reducing the potential for visual impairment in these areas.

Off-Road Vehicle Management

Elimination of restrictions on ORV use in sedimentary breaks soils would disturb the solitude of recreationists using these areas, including use along the UMNWSR. At the same time, motorized recreation opportunities would increase. The visual quality of these areas would decline as a result of new ORV trails. Impacts to recreation use resulting from ORV use would consist of a minor overall negative impact.

Identification of an intensive ORV use area would encourage increased use of adjacent WSAs, the Upper Missouri National Wild and Scenic River and several national recreation trails. Increased ORV use would create additional trails and noise. Visual contrasts would increase. Hunting quality within the intensive use area would decrease slightly because of the disturbance to game animals. These impacts would increase only slightly because of the moderate amount of ORV use anticipated in the area.

Right-of-Way Location

Limiting lineal ROWs within the UMNWSR Corridor to identified windows would allow continued enjoyment of primitive forms of recreation in areas not identified as windows. These areas would have had potential for increased access and visual impairment as a result of ROW development. These impacts would be minor.

Emphasis Areas

Sweet Grass Hills

Revoking the Bureau of Reclamation withdrawal, and subsequent opening of this area to mineral activity, would decrease the quality of primitive types of recreation because of an increase in access and visual impairment. Impacts would be minor because recreational use of the Sweet Grass Hills is quite low.

Cow Creek

This area would not be given special management attention. The values associated with the Nez Perce and Cow Island Trails, the Wild and Scenic Missouri River, and the WSAs would not be combined into one activity plan which could direct recreational users to an area that has a multitude of interpretive values. Impacts would be minor.

Upper Missouri National Wild and Scenic River Management

Facility Management

Private sector initiative in developing recreation facilities would provide a wide range of facilities of higher quality than can generally be provided by public agencies. Costs to the public for use of these facilities would be greater because of better facilities. Impacts would be minor.

Health and Safety

Contracting out the law enforcement duties on the UMNWSR would increase direct enforcement capabilities. Sheriff's department officers or officers from a state agency such as Montana Department of Fish, Wildlife and Parks would have a broad range of enforcement options, including arrest, which are not available now. Search and rescue responsibility would be decentralized among four adjacent counties, creating a logistical problem.

Impacts to Social and Economic Conditions

Land Tenure Adjustment

A total of 50,092 acres of public land would be disposed of by sale, exchange and/or the R&PP Act sale in this alternative.

The social and economic consequences of changes in the landownership pattern vary with the type of adjustment (sale or exchange), the length of time over which adjustments are made, and the magnitude of such adjustments.

The holder of a grazing lease and/or the adjacent landowner on a tract identified by BLM for disposal could be offered the opportunity to acquire it through exchange or sale. The ability of the lessee or adjacent landowner to participate can vary widely and there is a potential for minor adverse impacts to some ranch operations through loss of the leased area.

County governments would experience some effect on payment in lieu of taxes if public lands in their counties are exchanged for lands in another county. The net fiscal effects on local governments would depend on the type of land adjustment (sale or exchange) and whether the land adjustment is with private landowners or state and local governments. Fiscal effects would also depend upon whether exchanges are largely within or between counties and how the property taxes on lands passing into private ownership compare with the level of PILT. Tax exempt lands acquired from state or local governments through exchanges would be excluded from PILT. However, this loss of revenue to the counties could be partially offset by lands acquired by the state which might be subject to State Equalization Payments.

If exchanges were used as the only method of disposal, the exchange of 50,092 acres of public lands for private and/or state lands would have a minor net fiscal effect on PILT, State Equalization Payments and annual county property tax revenues. The net fiscal effect would depend on whether the land adjustment is with private landowners or state and local governments. However, if sales were used as a method of disposal, the sale of public lands to private individuals or organizations would increase annual county property tax revenues as a result of increasing the taxable land base. At the same time, federal PILT on public lands would be reduced as a result of transferring lands out of public ownership. Additional analysis of impacts would be necessary when specific land adjustment tracts are identified.

Off-Road Vehicle Management

Limiting travel to existing roads and vehicular ways in WSAs could require affected ranch operations to substitute horses or foot travel for casual vehicle use and thereby increase management costs. Opening certain areas with sedimentary breaks soils (slopes greater than 30%) to off-road vehicles could relieve affected ranch operations from substituting horses or foot travel for casual vehicle use. This could decrease management costs for those affected ranch operations. Maintaining access in all other areas for recreation, ranching and mineral activities would not limit the opportunity to open an area for resource development.

Under this alternative 640 acres would be designated for intensive ORV use. Assuming an increased level of activity, with designation, the local economies would benefit but the local and regional economic impacts of this alternative would be minor. There would be no significant change in the current economic or social conditions.

Right-of-Way Location

Windows would be established in existing corridor rights-of-way locations in the Upper Missouri National Wild and Scenic River Corridor. This could cause a utility or transportation corridor to take a longer route, and thus increase the cost of construction for transmission lines. The actual impact cannot be assessed further without specific details of a proposed corridor. All other areas open to rights-of-way location would not limit or curtail utility corridor development for transmission lines or the development of communication sites. There would be no significant change in the current economic and social conditions.

Emphasis Areas

Kevin Rim

Grazing, recreation, oil-gas, mineral and other resource development would continue in the Kevin Rim area. The buffer zones established around active raptor or peregrine nest sites would be minimal restrictions for resource development and subsequently the associated economic benefits. There would be no change in current economic and social conditions.

Sweet Grass Hills

Grazing, oil-gas, mineral and other resource development would continue. Revoking the Bureau of Reclamation withdrawal on 529.67 acres and opening East Butte to mineral entry would offer more opportunities for mineral resource exploration and development. Mineral exploration would offer very limited employment and income opportunities for the local economy. If exploration leads to mineral development, the local economy would benefit from long-term employment and income opportunities. The benefits from hardrock mining could be partially offset by curtailing some recreation use and the associated benefits to the local economy. Hunting is prominent in the lifestyle of many area residents and use of the Sweet Grass Hills for hunting is important to these people.

The practice of traditional religion has caused some concern regarding changing the character of the area by mineral exploration and/or development. The area offers the pristine qualities and solitude required for these religious practices. This is important to Native Americans in maintaining their traditions and culture. Exploration and mining in the Sweet Grass Hills would seriously alter the solitude of the surrounding environment, making a religious experience difficult to obtain. This management action could cause a significant change in the solitude and undisturbed environment of this area for Native Americans who use it for religious purposes.

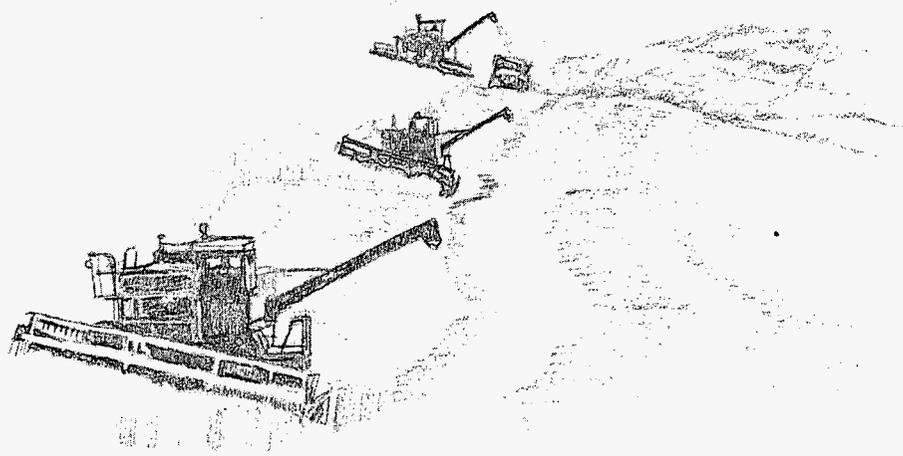
Cow Creek

Grazing, recreation, oil-gas, mineral and other resource development would continue in the Cow Creek area. In the short term, some ranch operations would experience a disruption of grazing practices due to the construction of livestock enclosures for riparian habitat on 100 acres along Cow Creek. This would be insignificant to the local economy. There would be no change in current economic and social conditions.

Upper Missouri National Wild and Scenic River Management

Visitor Services

This alternative would not unduly limit the type and intensity of recreation developments or the expansion of recreation concessions and leases onto public lands. This would provide the opportunity for recreation development by the private sector. Annual revenue for concessions, leases and local businesses would probably increase in the long term. Hunting, fishing and other recreation use in the area is expected to increase in the short and long term, with existing outfitters and guides receiving additional income over time. Currently, permitted outfitters offer services along the river, ranging from fully outfitted and guided trips to basic canoe services. In addition, two companies in Fort Benton utilize large pontoon craft. The local economy will benefit from an increase in expenditures for recreation services (motels, service stations, restaurants, etc.) but these changes would have only a minor impact on the local economy.



IMPACTS OF ALTERNATIVE C

Impacts to Soils

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of by sale, the R&PP Act and/or exchange in this alternative.

Some of the public land transferred to private ownership would be farmed, and some of that land would be highly erodible and/or farmed without proper conservation practices. This could contribute to increased wind and water erosion and decreased soil productivity.

The greater the public land disposal acreage, the greater the potential for increased wind and water erosion and the subsequent loss of productivity.

Off-Road Vehicle Management

Off-road vehicles lower the natural productivity of soil through compaction and increased wind and water erosion. The soils of the Missouri Breaks (soil subgroups 3, 4, 5 and 16) and sedimentary soils (see Appendix 2.5) along glaciated prairie drainages could be significantly impacted by ORVs due to sandy or clayey textures, high erodibility factors and slopes greater than 25%. The significant impact rating is due to water erosion, especially rill and gully erosion, and wind erosion on sandy areas. These impacts are caused by vehicular travel, both on and off roads and trails. These impacts are compounded by vehicular travel on wet soils. During dry periods increased wind erosion would result in a locally significant impact. Even limited ORV use on fragile soils would generally cause a drastic reduction in soil productivity and values.

There is the potential for locally significant impacts to soils in riparian zones in the form of streambank instability. ORV use would break down banks and increase wind and water erosion of these areas.

This alternative limits vehicular use to existing roads and trails on 317,190 acres, which would reduce negative ORV impacts. However, there could be locally significant negative impacts from vehicular use of existing roads and trails.

The remainder of the planning area, 197,462 acres, is open to ORV use. Impacts in these areas would be minor and short term.

Right-of-Way Location

Impacts from ROW facilities are usually associated with construction activities. Areas with high erosion susceptibility, shallow soils, steep slopes (greater than 25%), sparse native vegetation, and known slumping or mass wasting areas would have locally significant impacts from any surface disturbing activity. There are approximately 100,000 acres of sedimentary breaks type soils with slopes greater than 25% and approximately 4,000 acres of riparian areas that ROW facilities should avoid if at all possible. The acreage having the potential for significant impacts is therefore reduced, as long as the areas are avoided. If some of these sensitive areas are disturbed they must be reclaimed at the highest level of mitigation within 2 years.

ROW location could cause locally significant impacts in the ROW windows through the UMNWSR Corridor and associated sedimentary breaks soil types. However, impacts to soils, from ROW location, in areas other than sedimentary breaks type soils would be minor and short term.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

This alternative would create only minor positive impacts to soils because of restrictions reducing potential surface disturbances.

Cow Creek

A strong emphasis on intensive management of riparian vegetation would produce locally significant positive impacts to riparian systems and increase streambank stability within the Cow Creek area.

Upper Missouri National Wild and Scenic River Management

Facility Management

Streambanks might be damaged by facilities, and campground soils could be compacted, which would reduce ground cover and water infiltration and increase erosion. Impacts would occur only in the recreation or scenic sections, not wild sections of the corridor. This alternative would produce few negative impacts because facility development would be restricted by natural resource priorities.

Impacts to Water

Land Tenure Adjustment

This alternative could lead to the disposal of 15,664 acres of public lands through exchange, sale and/or the R&PP Act. If the intended future use of disposed of public land is farming, lowered water quality may occur from soil erosion and resultant sedimentation. The amount of impact would depend on the amount of land farmed. Acquisition of lands along water courses by the BLM would present minor potential for improved water quality through increased emphasis on improvement of riparian vegetation.

Overall, negative impacts to water resources resulting from land tenure adjustment, as specified in this alternative, would be minor because of the smaller potential acreage for disposal.

Off-Road Vehicle Management

ORV use impacts would occur as vegetation and ground cover are removed. The bare soil in the ruts and trails left by ORVs would be exposed to rill, gully and wind erosion resulting in accelerating headcut advancement and deepening ruts. Sediment eroded from these ruts and trails would be redeposited in downstream pools and reservoirs, thereby altering stream channels and shortening the life expectancy of water impoundments. Water quality would also be lowered with the increase in sediment concentration.

The impacts of ORV use would be especially evident on sedimentary breaks type soils (soil subgroups 3, 4, 5, 16) and on other soils with slopes greater than 25% (see Appendix 2.5). The impacts would be compounded even further when these soils are wet.

Impacts would also occur to riparian zones as streambank stability is reduced. Wind and water erosion would increase and water quality would decrease.

This alternative limits vehicular use to existing roads and trails on 317,190 acres which would reduce overall negative ORV impacts. However, locally significant negative impacts could occur on these existing roads and trails, especially during wet periods. Vehicles maneuver around rutted areas and potholes, widening existing roads and exposing more soils to potential erosion.

The remainder of the planning area, 308,908 acres, would be open to ORV use. These areas have more suitable soils and less steep terrains and would experience only minor, short-term impacts.

Damage caused by ORV use could be reclaimed on areas with suitable soils and flatter slopes simply by restricting use until natural revegetation occurs. Other areas, such as extensive use areas, sedimentary breaks type soils and areas with slopes greater than 25% may require mechanical treatment and seeding in addition to restricted ORV use. Some areas may not respond to reclamation in the short term and accelerated wind and water erosion would persist into the long term.

Right-of-Way Location

Water quality impairment from ROW facilities is usually associated with construction, is short term and generally reclaimable. In areas of sedimentary breaks type soils that have slopes greater than 25% (approximately 100,000 acres) ROW facility location would have the potential for locally significant impacts to water resources due to runoff, erosion and sedimentation.

In this alternative the location of ROW facilities should avoid these fragile soil areas if at all possible. If some of these sensitive areas are disturbed, they must be reclaimed at the highest level of mitigation within 2 years.

The potential for these impacts would also be reduced by 28,000 acres within the UMNWSR Corridor. However, these impacts could still occur on the ROW windows within the corridor.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

This alternative would be a minor positive impact to water because of restrictions reducing potential surface disturbances.

Cow Creek

This alternative would produce locally significant positive impacts for water quality resulting from intensive management of riparian areas. Intensive management of these areas would decrease soil erosion, increase streambank stability and reduce sedimentation.

Upper Missouri National Wild and Scenic River Management

Facility Management

Pit type toilets would be placed only where the bottom of the pits would be at least 10 feet above the water table. This would greatly reduce the potential for contamination of groundwaters. Streambank stability could be damaged at facility locations. Water quality of the Upper Missouri would improve because of stringent restrictions to protect natural resources. Streambank stability would increase, while erosion would decrease, improving water quality. Impacts, planning area wide, would be very minor.

Impacts to Mineral Resources

Table 4.3 details the constraints on oil and gas development under this alternative.

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of by sale, exchange and/or the R&PP Act in this alternative.

Impacts to mineral resources could occur where mineral potential is high. It is expected that only surface resources would be exchanged. Disposal of surface acreage located over federal minerals with known mineral potential results in diminished surface use control when permitting development of subsurface minerals. Reuniting federal minerals with federal surface would allow increased surface use control and facilitate better management of federal minerals. Detailed analysis of mineral potential would be required to prevent significant negative impacts when disposing of federal subsurface.

Land acquisition to consolidate public ownership within identified areas may produce conflicts with private mineral owners, but would allow for greater surface use control.

If land adjustments result in a net gain of federal minerals in areas managed under stringent surface constraints (such as wilderness study areas), it could create locally moderate impacts to oil and gas development. If lands with both surface and subsurface rights are obtained in the Sweet Grass Hills, a protective withdrawal would be pursued. This would be a locally significant, long-term negative impact to mineral development in the area.

Off-Road Vehicle Management

Mineral development could be inconvenienced by the limited ORV designations. The effect would be minor because ORV use authorizations can be obtained on a case by case basis for mining development by filing a notice or under the 3809 Mining Regulations.

ORV map publications and updates would allow better access planning to proposed well sites and production facilities. This would have a minor positive effect on fluid minerals.

New roads resulting from oil-gas activities would have to be reclaimed when no longer needed, which would increase costs to the oil-gas industry. This would be a minor impact.

The closure of Gist Road would have no impact to mineral resources.

Right-of-Way Location

Avoiding identified areas may hinder development if exploration of unknown mineral potential lands results in large, new discoveries. Costs may increase if a pipeline must be located around an avoidance area. This could be a locally moderate impact but would be minor in relation to the entire planning areas.

Planned ROW corridors would provide for necessary connections of mineral development areas separated by designated avoidance areas. Publicizing avoidance and restricted areas would facilitate mineral development. This would reduce the mineral application process and concentrate on the available areas, however this still results in a moderate negative impact due to cost increases.

TABLE 4.3
CONSTRAINTS ON OIL AND GAS EXPLORATION AND DEVELOPMENT (ALTERNATIVE C)¹

Management Categories	High Development Potential Acres	Moderate Development Potential Acres
1. Open Subject to Standard Terms and Conditions These are areas where standard terms and conditions are sufficient to protect other land uses or resource values.	Total subsurface acreage with high development potential minus acreage in categories 2 and 3 below. 396,591	Total subsurface acreage with moderate development potential minus acreage in categories 2 and 3 below. 244,954
2. Open Subject to Seasonal or Other Minor Constraints These are areas where moderately restrictive lease stipulations (such as seasonal restrictions) may be required to mitigate impacts to other land uses or resource values.	* Kevin Rim area * Sweet Grass Hills (East & West Buttes) area outside ACEC * Cow Creek Corridor ACEC * Crucial wildlife areas in the Havre Resource Area * Marias River area above Tiber Reservoir 257,365	* A small portion of Cow Creek Corridor ACEC * Crucial wildlife areas in Havre Resource Area * Marias River area below Tiber Reservoir 94,808
3. Closed to Leasing Discretionary These are areas where other land uses or resource values cannot be adequately protected even with the most restrictive lease stipulations. Appropriate protection can only be ensured by closing the lands to leasing.	* UMNWSR * WSAs Sweet Grass Hills (East, West, & Middle Buttes) ACEC including the 529 acre BOR revocation on East Butte 41,673	* UMNWSR * WSAs 86,076
	TOTAL HIGH 695,629	TOTAL MODERATE 425,838

¹BLM, 1987

Emphasis Areas

Kevin Rim

Maximum protection of resource values while continuing provisions for exploration and development of federal minerals would create a significant negative impact to oil-gas developers by increasing operation costs. This could cause drilling and/or well completion delays due to institution of specific drilling windows or time constraints.

The four existing corridors would provide sufficient ROWs for product export pipelines, if significant volumes of CO₂ would be discovered under Kevin Rim.

Mineral projects which would not meet necessary mitigative stipulations to protect surface resources would be denied. Mineral projects that historically were permitted could be denied.

The only locatable minerals in the Kevin Rim are found in a sandstone formation containing iron and titanium. An ACEC designation of this area would have only a minor negative impact on development of these mineral resources. This is because the deposits are remotely located, would require large capitol investments to develop and other national sources exist.

Sweet Grass Hills

A negative impact to oil-gas development would result because future mineral leasing would not be allowed under a protective withdrawal. This may result in drainage of federal minerals by fee and state wells on adjacent lands. This impact would be significant.

Although it is unlikely that oil-gas would be found in the Sweet Grass Hills proper, the uplifted, truncated sediments surrounding the area provide excellent oil and gas traps.

Raptor habitat protection stipulations may delay oil and gas exploration depending on surface disturbance relative to the proximity to raptor habitat.

Withdrawal of the ACEC would eliminate any unclaimed lands from future exploration or mining. Existing claims could still be worked and proceed to patent under this alternative. On lands currently open to entry this would be a moderate negative impact because there is the chance that not all lands valuable for locatable minerals would be claimed.

The 529.67 acres currently in the Bureau of Reclamation withdrawal on East Butte would be put under the protective withdrawal and remain closed to mineral entry. This would be a significant negative impact to the minerals industry because these lands have a high potential for the occurrence of gold and silver deposits. However, there are no existing claims located on the withdrawal to provide development opportunity. On all lands within the ACEC designation, the operator would be required to file a Plan of Operations for any exploration or development; including projects disturbing 5 acres or less previously authorized by filing a notice (43 CFR 3809.1-4). The additional workload involved in plan preparation, over that of a notice, and the need to wait for formal approval, would be a minor negative impact to operators and development of the mineral resources.

On lands within an ACEC, the Memorandum of Understanding (MOU) between BLM and the Montana Department of State Lands (DSL) would not apply. This would be a minor negative impact to effective regulation of hardrock mineral operators because both BLM and DSL would still retain their legal regulatory obligations even though there would be no formal cooperative agreement. Informal cooperation between BLM and DSL on regulating operators would be expected to continue.

Cow Creek

More restrictions to mining might result from increased surface resource protection, but would be a minor impact because there is little locatable mineral potential.

Impacts to Vegetation

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of by sale, exchange and/or the R&PP Act in this alternative.

Public land vegetation would experience minor benefits from landownership adjustment, which allow for improved management. There are currently about 8,000 acres of land within the central portion of the planning area that receive very little management attention. There is little opportunity to improve the vegetation on these lands because it is uneconomical due to unit size. Retention of 34,428 acres of land would provide the BLM with limited opportunities for vegetation enhancement. Vegetation enhancement could be achieved by acquiring private inholdings through exchange within the remaining 500,000 public acres with high value resources.

Vegetation types having the most potential for improvement are the rose/snowberry, cottonwood/willow, non-wooded breaks, and riparian/wetlands. However, only minor improvement would be expected since these areas are also the most utilized.

Lands disposed of through sale or exchange may be partially or completely farmed. Native vegetation may be destroyed where plowing occurs if disposal is by sale. These negative impacts would be minimized under this alternative because it involves the lowest acreage for land tenure adjustment. Impacts to vegetation could be moderate if a considerable amount of native range were plowed.

Off-Road Vehicle Management

This alternative places the greatest restrictions on ORV use to protect vegetation and other resources and would create moderate benefits for vegetation.

ORV management would allow for maximum protection of vegetation. Sedimentary soils and riparian areas would be protected by permitting ORV use only on designated roads-trails when soil is wet (e.g., March 1—June 30).

Closing the Gist Road from the homestead to the river would keep ORVs out of some riparian habitats along the river. This would assist cottonwood-willow community rejuvenation.

Right-of-Way Location

Impacts to vegetation resulting from ROW location would be moderately beneficial under this alternative because ROWs would be excluded in several areas and avoided in a number of others. Vegetation would benefit from limiting impacts such as physical trampling or removal of vegetation and indirect damage by increasing soil erosion and compaction.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

Maximum protection in these areas may impact livestock management to a very small degree. Proposed range improvements (water pipelines, spring developments, and fencing) would require additional stipulations such as excluding livestock during spring or fall from riparian habitats, winter habitat or near nesting sites of peregrine falcons. Range improvements would not be allowed where unmitigated conflicts with wildlife or cultural resources are involved. An example would be nesting areas of peregrine falcons or important elk habitat in the Sweet Grass Hills.

Cow Creek

This alternative would require revisions of existing AMPs to implement more comprehensive management to improve riparian vegetation. Management objectives would be centered on the most critical riparian and non-wooded breaks types. The long-term actions would include development of at least 25 acres of riparian habitats and about 100 acres additional vegetation, if private land is acquired within the area.

About 16,800 acres of non-wooded breaks could be increased from fair to good range condition in the long term. This would increase the production of preferred species such as western wheatgrass, green needlegrass, and needleandthread grass. Shrubs such as big and silver sagebrush and Nuttall's saltbush would benefit from increased livestock management.

Positive impacts to vegetation in relation to Cow Creek would be locally significant, but minor in relation to the entire planning area.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Recreation use within the river corridor would be limited therefore, ecological condition and trend would not be influenced. Opportunities for noxious plants becoming established would be diminished. Impacts to vegetation would be positive, but minor in relation to the entire planning area.

Impacts to Wildlife and Fisheries

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of by sale, exchange and/or the R&PP Act in this alternative.

Wildlife values would decrease on disposed of public lands because of an increase in monoculture habitats and decreased yearlong habitat. This alternative would retain all land adjustment areas, except for selected disposal units. Crucial wildlife habitat could be lost due to land

disposal actions. This would be a moderate negative impact. The steep and broken terrain within these lands would not permit conventional farming so negative impacts to wildlife resources would be minimized.

The 15,664 acres of land identified for disposal contains the following habitat: 345 acres of crucial spring sharp-tail grouse habitat, 80 acres of crucial winter/spring sage grouse habitat, 200 acres of crucial ring-necked pheasant habitat and one 39-acre unit containing wetlands.

Land acquired under this alternative would have the same moderate positive impacts as discussed in Alternative A. A moderate negative impact could occur if these 15,664 acres were sold because the 625 acres of crucial habitat described above would be lost.

Off-Road Vehicle Management

Deer fawning and elk calving areas, antelope winter range, raptor nesting habitat, and grouse breeding-nesting habitat would be seasonally protected from most ORV disturbance (see Table 2.3). Damage to waterfowl, raptor, and non-game bird nesting habitat would be minor. Increased human activity would cause short-term movement of wildlife species from the area. Positive impacts such as seasonal protection of crucial habitats would be moderate because of the low amount of ORV use occurring and expected.

Right-of-Way Location

Most ROWs would cause minor disturbances to habitat and temporary harassment of some wildlife species. Potential impacts to specific habitat types cannot be determined, since it is not known where future ROWs would occur. Impacts to wildlife can only be discussed in general terms.

ROWs would cause short-term harassment of most wildlife species and would cause temporary movement of wildlife from the area. There would be a minor loss of habitat from most ROWs such as transmission, pipe, and telephone lines. ROWs through wetlands could disturb aquatic habitat by destroying fragile wetland vegetation, increasing sedimentation, and affecting annual runoff.

By not permitting ROWs in WSAs, the Cow Creek area, and the Missouri River Corridor about 37,000 acres of crucial elk habitat, 138,050 acres of crucial mule deer habitat, 4,500 acres of crucial white-tailed deer habitat, 59,000 acres of crucial bighorn sheep habitat, and 4,500 acres of crucial ring-necked pheasant habitat would avoid disturbance.

Overall impacts would be minor because of the low number of ROWs anticipated throughout the life of the plan.

Emphasis Areas

Kevin Rim

Restrictions placed on mineral leases and land use authorizations on the Kevin Rim would reduce the amount and intensity of disturbance to raptors. Limiting ROWs to four corridors would limit disturbance in the remaining areas of the rim. These impacts would be a locally significant positive impact, but minor overall.

Sweet Grass Hills

Modifying stipulations for raptor protection would reduce the amount and intensity of disturbance to raptors. Elk in the Sweet Grass Hills would benefit from modifications in grazing management which would maintain elk habitat in good condition. Some elk habitat in pristine condition

would be maintained. These impacts would be locally significant. Opening 500 acres of land on East Butte to mineral entry could create a new disturbance to elk, raptors, and deer in this area. A large open pit operation could have long-term significant negative impacts on big game by reducing habitat.

Cow Creek

Riparian habitat would be expected to improve and increase in size because of a strong emphasis on riparian management in allotment management plan (AMP) revisions. If all private land within the area would be acquired, about 100 acres of riparian would be secured. The institution of livestock grazing management, placement of livestock watering sources outside the creek bottom, and excluding livestock from riparian habitats with exclosures would improve riparian condition. About 100 acres of crucial white-tailed deer and pheasant habitat would be secured. Beaver and non-game bird habitat would also improve. The 220 acres of crucial mule deer habitat would improve.

Significant local improvement of wildlife values would occur but overall effects would be minor in relation to the planning area.

Upper Missouri National Wild and Scenic River Management

The impacts of recreation management, including facility and concession management would be the same as those described in Alternative A.

Impacts to Grazing Management

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of by sale, exchange and/or the R&PP Act in this alternative.

Exchanging small isolated tracts of public land for private inholdings would be a moderate positive impact. It eliminates management of small acreage allotments which are uneconomical to manage and allows acquisition in other allotments of larger federal acreage which improves management opportunities. Disposal of lands by sale would eliminate the potential of improved grazing management opportunities. Approximately 50,092 acres could be lost as trading stock for high value range resources. This would be a moderate negative impact.

Retaining 34,428 acres of land with limited resource values would limit management opportunities. This would limit opportunities to acquire private inholdings in allotments which may limit the ability to improve public rangelands.

This alternative would eliminate about 1,568 animal unit months (AUMs) in the western part of the planning area. The potential is good for acquiring private land for livestock management in the western portion of the planning area. However, land exchanges for the purpose of acquiring land for livestock management would receive very low priority under this alternative because livestock grazing is a consumptive use and is not a resource protection use. Acquisitions triggered to meet objectives of the Endangered Species Act, special management areas, and wilderness study areas could produce secondary use benefits for livestock grazing.

Full federal control of the river riparian areas in the eastern part of the river corridor could be achieved and grazing management could be implemented to improve the riparian habitat condition if private and state land could be acquired.

Overall impacts would be minor.

Off-Road Vehicle Management

Maximum protection of the public resources would benefit range land by reducing vegetation disturbance, weed invasion, soil compaction, rill and gully erosion and potential harassment of livestock by ORVs. Casual lessee vehicle use might be restricted, resulting in a minor negative impact.

Overall, minor benefits would result.

Right-of-Way Location

There would be no impacts from this alternative. If any type of trenching occurs and trenches are open for 24 hours, livestock bridges must be provided. The grazing permittee must be notified prior to construction activities.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

Designation of these areas as areas of critical environmental concern (ACECs) and the associated resource protection might disrupt livestock grazing to a minor degree. Livestock management facility development would be restricted by protective stipulations. Examples might include exclosing livestock during spring or fall grazing from riparian habitat, winter wildlife habitat, or raptor nesting habitats. Range improvements would not be allowed where unresolved conflicts would occur with cultural and wildlife resources.

Cow Creek

The inclusion of riparian management objectives and the designation of this area as an ACEC would require a comprehensive revision of the five existing AMPs. Additional cross fences, water developments, more intensive livestock management and BLM intensive monitoring might be required. Impacts to grazing would be minor.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Minor impacts would occur from the disruption of livestock grazing patterns for continued recreation and where recreation use occurs, livestock may be forced to vacate or avoid shaded areas used for rest. Since few additional recreation areas would be developed, this impact would be minor.

Impacts to Cultural Resources

Land Tenure Adjustment

This alternative would dispose of 15,664 acres of isolated land, resulting in the loss of about 138 archaeological and historical sites. About 20% of these, or 27 sites, would be significant enough to warrant their retention. A number of other sites would be obtained in any exchange. The overall adverse impact to cultural resources would be less than the above maximum figures.

Land exchanges and acquisitions would have a beneficial effect on cultural resources where more valuable historic and archaeological sites were acquired than disposed of. Lands with significant cultural resources should receive a high priority for acquisition.

Off-Road Vehicle Management

ORV impacts to cultural resources are primarily caused by erosion resulting from concentrated vehicle traffic for an extended time. In areas where travel is restricted to roads-trails, there would be no greater impact to archaeological or historical sites than is now occurring. In open ORV travel areas, a number of sites could be affected for the first time. There is no way to estimate the quantity of these impacts since BLM has not inventoried much of the land in the principal ORV areas (Missouri River Breaks). It is likely that some sites would be impacted and due to the irreplaceable nature of cultural resources, this could result in a moderate long-term local impact.

Right-of-Way Location

This alternative would have the same impacts Alternative A, except in the emphasis management areas, wilderness study areas, and the majority of the Missouri River Corridor where no impacts would occur. Cultural resources in the ROW corridors across the river might receive visual and physical impacts, although many of the areas currently have lineal ROW developments. Some of the impacted areas are Dauphin Rapids and Judith Landing Historic Districts, and the Fort Benton Historic Landmark.

Emphasis Areas

Kevin Rim

Development in a zone (1/4 mile x 8 miles) below the Kevin Rim escarpment would not be authorized if impacts to cultural resources could not be mitigated.

It is estimated that there are 70 sites on public land and the 270 sites on public mineral estate. About 30% of the 70 sites and most of the highly significant sites would receive no impacts. This is a moderately beneficial impact. The impacts would be the same outside the zone as they would be for Alternative A.

Sweet Grass Hills

Restrictions on mining and other activities in the Sweet Grass Hills would protect cultural and religious sites. The mineral withdrawal would prevent any future possibility of mining activity in the area except where valid, existing rights have already been established. With the elimination of this possibility, there would be less degradation of the area because of mining. The ACEC designation would require that BLM exercise a greater degree of oversight on all kinds of activity in the area and would remove the area from the requirements the BLM/Department of State Lands MOU on hard rock mining. Therefore, under this alternative, all impacts to cultural and religious sites would be moderately positive.

Cow Creek

The proposal to designate this area as an ACEC would enhance the preservation of the historic setting of the Nez Perce Trail by limiting future development. Because the area would permanently be subject to more stringent development standards, this would be a long-term, significantly positive benefit.

Upper Missouri National Wild and Scenic River Management

Visitor Services

The development of new campsites might occur in areas with significant cultural resources. The increased visitor traffic might result in cultural resources disturbance, but avoidance is usually possible if the resources are found early. Overall, impacts would be moderately positive. Increased public awareness via the development of interpretive sites would enhance cultural resources along the Missouri River.

Facility Management

Developments proposed in this alternative, depending on where they occur, may affect cultural resources by increasing visitor traffic or constructing facilities. The impacts may be physical disturbance, theft, or the introduction of visual intrusions into a historic scene. Impacts would be minor. If these impacts could not be mitigated facility development would be foregone; a moderate positive impact for cultural resources.

Concession Management

This alternative would be a positive moderate affect because potential impacts would be eliminated.

Health and Safety

Cultural resources may benefit from the presence of the BLM river management staff (rangers) on the river because vandalism and theft of artifacts may be lessened. This would be a minor benefit.

Impacts to Recreation

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of by the R&PP Act and/or exchange in this alternative.

The maximum overall loss of public access lands would range from 2-7%. Considerably less public access would probably be lost since exchange is the preferred method of disposal. Hunting is the primary recreation value of those public lands. These impacts would be minor since most public lands do not offer exceptional hunting or dispersed recreational opportunities. Overall loss of access to public land acreage would be minor.

Land adjustments would provide a multitude of significant positive benefits. Access would be provided to a number of important areas so that users can maximize each area's recreational values. These areas generally include the Missouri and Marias Rivers, the WSAs, the Sweet Grass Hills, the Kevin Rim, Congressionally designated trails, important fishing reservoirs and hunting areas, etc. Some of the public lands would be consolidated so the recreational values are better protected or enhanced. In addition, a more definable federal land pattern would reduce confusions for recreational users.

Off-Road Vehicle Management

ORV use is primarily associated with hunting, ranching, BLM administration, and oil-gas exploration-development. These users generally use existing roads and trails. The area is not a high-use area and ORV disturbances are infrequent. There is infrequent motorbike club use of BLM

administered land. Restrictions on ORV use in specified areas would enhance non-motorized recreation activities at the expense of motorized activities. Overall impacts would be minor because of low ORV use.

This alternative would preserve the pristine character of the Missouri Breaks, the Marias River Corridor, the Sweet Grass Hills, riparian areas, and important wildlife habitats. Most of those values are high quality VRM areas as well.

Right-of-Way Location

This alternative would be beneficial to the non-motorized recreation VRM and wilderness values. This alternative would be the most protective by avoiding or excluding ROWs from high value recreation areas.

Visual protection of the Sweet Grass Hills and Kevin Rim would ensure the primitiveness of those areas. Protecting the wetlands and riparian areas would help assure wildlife population stability.

Emphasis Areas

Kevin Rim

The impact of protecting this area would primarily be for interpretive values. Providing intensive management for raptors, allows visitors an opportunity to see these wildlife resources. Overall, the impact to recreational resources would be a minor positive one.

Sweet Grass Hills

This alternative would have both negative and positive impacts for recreational and ORV use. ORV use in portions of the area would be restricted. The positive benefit would be that an ORV plan would be prepared, thereby protecting recreational users from dangerous mining operations and sites. The VRM quality would be enhanced and impacts to the natural character of the land would be maintained.

The overall recreation impact would be a minor positive one.

Cow Creek

ACEC designation would combine a multitude of management plans into one activity plan. Long-term goals for the area would be more coherent and one plan would be easier for the public to understand. The activity plan would provide the guidance necessary to develop an interpretive and recreational plan that combines all the area's special management values. It would also enhance and protect the area's visual and natural qualities.

The impact to recreation would be a moderate positive one.

Upper Missouri National Wild and Scenic River Management

Facility Management

Restrictions on future facility development in recreational and scenic sections and prohibiting of such development in wild sections of the UMNWSR would limit management options. This could result in regulating use of the river through user capacity, and would be a minor impact.

Concession Management

Private sector operation of some recreation facilities in recreational sections of the UMNWSR Corridor could provide a wider array of recreation opportunities. This would be a minor impact.

Health and Safety

Initiating BLM law enforcement on the UMNWSR would increase compliance with Bureau regulations and would help maintain the natural environment.

Impacts to Social and Economic Conditions

Land Tenure Adjustment

Please refer to Alternative B for a general discussion of the impacts.

Landownership transactions under this alternative could result in the disposal of 15,664 acres of public lands. If exchanges were used as the only method of disposal, the exchange of 15,664 acres of public lands for private and/or state lands would have a minor net fiscal effect on PILT, State Equalization Payments and annual county property tax revenues. The net fiscal effect would depend on whether the land adjustment is with private landowners or state and local governments. However, if sales were used as a method of disposal, the sale of public lands to private individuals or organizations would increase annual county property tax revenues as a result of increasing the taxable land base. At the same time, federal PILT on public lands would be reduced as a result of transferring lands out of public ownership. Additional analysis of impacts would be necessary when a specific land adjustment and tracts are identified.

Off-Road Vehicle Management

Limiting travel to existing roads and vehicular ways in WSAs could increase management costs by requiring affected ranch operations to substitute horses or foot travel for casual vehicle use. Designating lands in some areas as limited to off-road vehicles could increase costs to public land lessees. In those areas where ORV use now occurs, restrictions could increase costs to ranchers and oil and gas operators, because of the need for a permit on a case by case basis for motorized access or the need for non-motorized access to the area. In areas where ORV use does not occur, the future opportunity to open an area to development activities would be limited. The character of recreational use would change, adversely impacting those who use motor vehicles while benefiting those who prefer non-motorized forms of recreation. Maintaining access in all other areas for recreation, ranching and mineral activities would not curtail the future opportunity to open an area for resource development. These changes would only have a minor impact to the local economy.

Right-of-Way Location

The designation of avoidance areas and windows could cause a utility or transportation corridor to take a longer route, and thus increase the cost of construction for transmission lines. The actual impact cannot be assessed further without specific details of a proposed corridor. With

East Butte, an established communication site and exclusion of West and Middle Butte of the Sweet Grass Hills would probably have little or no impact to the development of future communication sites. All other areas open to rights-of-way location would not limit or curtail utility corridor development for transmission lines or the development of communication sites. These changes would only have a minor impact to the local economy.

Emphasis Areas

Kevin Rim

Managing Kevin Rim under emphasis management guidelines would not preclude utilization of the area for grazing, recreation, oil-gas, mineral and other resource development, but would restrict activities in sensitive areas. The buffer zones established around active raptor or peregrine nest sites would restrict resource development and subsequently the associated economic benefits. These changes could have a minor impact to the local economy.

Sweet Grass Hills

Managing the Sweet Grass Hills under special management guidelines would not preclude utilization of the area for grazing, recreation and oil and gas activities but would preclude the potential for some mineral resource development and subsequently the associated economic benefits. Mineral exploration in the area would offer very limited employment and income opportunities for the local economy. The benefits from hardrock mining could be partially offset by curtailing some recreation use and the associated benefits to the local economy. Hunting is prominent in the lifestyle of many area residents and use of the Sweet Grass Hills for hunting is important to these people. Some ranch operations could experience a disruption of current grazing practices with a change in grazing management to emphasize maintenance of elk winter habitat. There would be no significant change in current economic and social trends. These changes would have minor impact to the local economy.

The practice of traditional religion has caused some concern regarding changing the character of the area by mineral exploration and/or development. The area offers the pristine qualities and solitude that are required for these religious practices. This is important to Native Americans in maintaining their traditions and culture. Exploration and mining in the Sweet Grass Hills would be limited to valid, existing claims. Mining operators would be required to file a Plan of Operations for formal approval by BLM on any exploration or development work they want to perform. This would give management more control over disturbance to the environment and a basis for consultation with Native Americans about religious use of the area.

This would minimize the impacts to the solitude and undisturbed environment of the area which are key elements for these religious practices. This management action could cause a moderate change in the solitude and undisturbed environment of this area.

Cow Creek

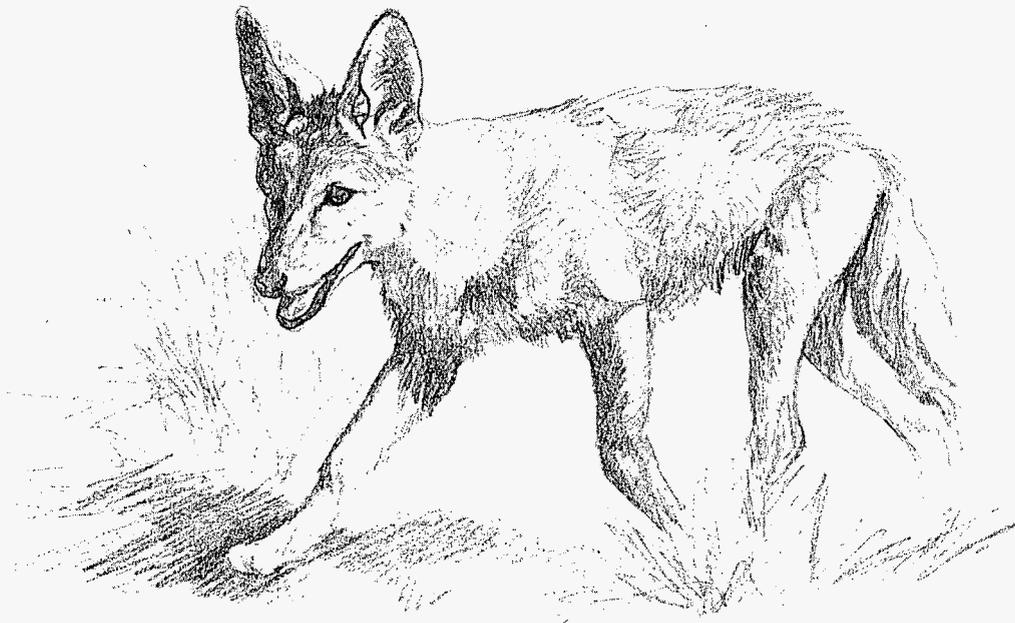
Managing Cow Creek under special management guidelines would not preclude utilization of the area for grazing, oil and gas, mineral and other resource development. In the long term, some ranch operations could experience a disruption of current grazing practices with a change to emphasize intensive management of riparian vegetation. This would be insignificant to the local economy. There would be no change in current economic and social conditions.

Upper Missouri National Wild and Scenic River Management

Visitor Services

This alternative would provide the opportunity for private sector concession development in the recreation section of the river with limits on the type and intensity.

Currently, seven permitted outfitters offer services along the river, ranging from fully outfitted and guided trips to basic canoe services. In addition, two companies in Fort Benton utilize large pontoon craft. The local economy will benefit from an increase in expenditures for recreation services (motels, service stations, restaurants, etc.) but these changes would only have a minor impact to the local economy.



IMPACTS OF ALTERNATIVE D (THE PREFERRED ALTERNATIVE)

Impacts to Soils

Land Tenure Adjustment

Some disposed of tracts would have native vegetative cover plowed to cultivate agricultural crops, resulting in increased wind and water erosion. Potentially, 15,664 acres could be disposed of through exchange, sale or R&PP Act sale; and an additional 34,428 acres exchanged for other lands. Acquisition of and intensive management of private land in areas of high resource interest could stabilize soils by increasing vegetative cover. Overall impacts would be minor.

Off-Road Vehicle Management

Off-road vehicles lower the natural productivity of soil through compaction and increased wind and water erosion. The soils of the Missouri Breaks (soil subgroups 3, 4, 5, and 16) and sedimentary soils (see Appendix 2.5) along glaciated prairie drainages can be significantly impacted by ORVs due to sandy or clayey textures, high erodibility factors and slopes greater than 25%. The significant impact rating is due to water erosion, especially rill and gully erosion, and wind erosion on sandy areas. These impacts are caused by vehicular travel, both on and off roads and trails. These impacts are compounded by vehicular travel on wet soils. During dry periods increased wind erosion would result in a locally significant impact. Even limited ORV use on fragile soils would generally cause a drastic reduction in soil productivity and values.

There is the potential for locally significant impacts to soils in riparian zones in the form of streambank instability. ORV use would break down banks and increase wind and water erosion of these areas.

This alternative limits vehicular use to existing roads and trails on 317,190 acres which would reduce negative ORV impacts. However, there could be locally significant negative impacts from vehicular use of existing roads and trails.

Locally significant impacts, both on and off existing roads and trails, could occur on 199,034 acres which would be open to ORV use November 1—April 1. Within this acreage is a 640 acre area which may be designated for intensive use by cross-country motorcycles. This use would continue to denude portions of the area of native vegetation; increasing wind and water erosion in the area.

The remainder of the planning area, 198,142 acres, is open to ORV use. Impacts in these areas are expected to be minor and short term.

Right-of-Way Location

Impacts from ROW facilities are usually associated with construction activities. Areas with high erosion susceptibility, shallow soils, steep slopes (greater than 25%), sparse native vegetation, and known slumping or mass wasting areas would have locally significant impacts from any surface disturbing activity.

There are approximately 100,000 acres of sedimentary breaks type soils which have slopes greater than 25% and approximately 4,000 acres of riparian areas that should be avoided. If these sensitive areas are avoided, the acreage

having the potential for significant impacts would be reduced. If some of these sensitive areas are disturbed, they would be rehabilitated using the appropriate mitigative measures.

ROW location could cause locally significant impacts in the ROW windows in the UMNWSR and associated sedimentary breaks soil types. However, impacts to soils, from ROW location, in areas other than sedimentary breaks type soils would be minor and short term.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

This alternative would be a minor positive impact to soils because of restrictions that reduce the potential for surface disturbances.

Cow Creek

Intensive management of riparian systems would increase the quantity and quality vegetative cover, thereby increasing streambank stability. This would be a locally significant positive impact.

Upper Missouri National Wild and Scenic River Management

Facility Management

Streambanks might be damaged by facilities, and soils and vegetation around campgrounds could be compacted which would reduce ground cover, reduce water infiltration and increase erosion. This alternative would produce few negative impacts because livestock use of recreation sites would be eliminated during high use periods and developments would be mitigated to protect soils and other natural resources.

Impacts to Water Resources

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of through exchange, sale or the R&PP Act and 34,428 acres exchanged under this alternative.

Some disposed of tracts would have native cover plowed to cultivate agricultural crops, resulting in increased erosion and sedimentation of streams and reservoirs below these areas. The longer these lands remain in agricultural production the higher the soil erosion potential due to decreases in organic matter and soil structure. The potential impacts are unknown due to changes in the federal farm programs and the class and amount of land that may be converted to agricultural production. Potentially, 50,092 acres could be exchanged or sold for other lands in special management areas and other areas of high resource values.

Off-Road Vehicle

ORV use impacts occur as vegetation and ground cover are removed. The bare soil in the ruts and trails left by ORVs is exposed to rill, gully and wind erosion resulting in accelerated headcut advancement and deepening ruts. Sediment eroded from these ruts and trails is redeposited in downstream pools and reservoirs, thereby altering stream channels and shortening the life expectancy of water impoundments. Water quality is also lowered with the increase in sediment concentration.

The impacts of ORV use are especially evident on sedimentary breaks type soils (soil subgroups 3, 4, 5, 16) and on other soils with slopes greater than 25% (see Appendix 2.5). The impacts are compounded even further when these soils are wet.

Impacts also occur to riparian zones as streambank stability is reduced. Wind and water erosion would increase and water quality would decrease.

This alternative limits vehicular use to existing roads and trails yearlong on 118,156 acres and seasonally on 199,034 acres (April 1 to November 1). Locally significant impacts could occur on these existing roads and trails, especially during wet periods. Vehicles maneuver around rutted areas and potholes, widening existing roads and exposing more soils to potential erosion.

Approximately 199,034 acres of sedimentary breaks type soils would be open to ORV use from November 1 to April 1. Locally significant impacts, both on and off existing roads and trails would not be expected to occur. Soils would normally be frozen during this period and impacts would be minor.

The remainder of the planning area, 308,908 acres, would be open to ORV use. These areas have more suitable soils and less steep terrains and would experience only minor, short-term impacts.

Damage caused by ORV use could be reclaimed on areas with suitable soils and flatter slopes simply by restricting use until natural revegetation occurs. Other areas, such as extensive use areas, sedimentary breaks type soils and areas with slopes greater than 25% may require mechanical treatment and seeding in addition to restricted ORV use. Some areas may not respond to reclamation in the short term and accelerated wind and water erosion would persist into the long term.

Right-of-Way Location

Water quality impairment from ROW facilities is usually associated with construction, is short term and generally reclaimable. In areas of sedimentary breaks type soils that have slopes greater than 25% (approximately 100,000 acres), ROW facility location has the potential for locally significant impacts to water resources due to runoff, erosion and sedimentation.

This alternative would encourage the location of ROW facilities to avoid these fragile soil areas; reducing the acreage having the potential for significant impacts. If some of these sensitive areas would be disturbed, they must be reclaimed using the appropriate mitigative measures. These impacts would be associated with ROW location through the windows in UMNWSR and associated sedimentary soils areas.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

This alternative would be a minor positive impact to water because of restrictions reducing potential surface disturbances.

Cow Creek

A strong emphasis on intensive management of riparian vegetation would improve streambank stability and water quality along Cow Creek. This impact would be significant locally, but minor overall.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Development of recreation facilities along the Missouri River would slightly decrease water quality and streambank stability on a short-term basis, until disturbed areas could revegetate. Overall impacts within the planning area would be minor.

Facility Management

Pit type toilets would only be placed only where the bottom of the pits would be at least 10 feet above the water table. Potential contamination of groundwaters would be greatly reduced.

Impacts to Mineral Resources

Table 4.4 details the constraints on oil and gas development under this alternative.

Land Tenure Adjustment

A total of 15,664 acres of public land would be disposed of by exchange, sale or the R&PP Act and 34,428 acres exchanged in this alternative.

Land tenure adjustments which reunite federal surface and subsurface would facilitate surface management and increase operator costs to comply with stipulations. Blocking up federal minerals within the UMNWSR Corridor would reduce the risk of drainage of oil-gas reserves by producing wells in private or state ownership. Disposal of federal surface lying over federal minerals would reduce BLM's surface management control. If land adjustments result in a net gain of federal minerals in areas managed under more stringent surface constraints there could be locally moderate impacts to oil and gas developments.

Off-Road Vehicle Management

Impacts to exploration and development of mineral resources would be minor because administrative use may be authorized on a case by case basis. Casual inspection of areas for mineral potential would be subject to ORV designations which may, in a few instances, require access by horseback or foot to areas of interest.

Right-of-Way Location

Excluding ROWs, except for identified areas, may cause additional cost to pipeline companies. Avoiding identified areas could hinder development if exploration of lands with unknown mineral potential results in large discoveries. Costs could increase if a pipeline must be located around an avoidance area. This could be a locally moderate impact.

TABLE 4.4
CONSTRAINTS ON OIL & GAS EXPLORATION & DEVELOPMENT (ALTERNATIVE D)¹

Management Categories	High Development Potential Acres	Moderate Development Potential Acres
1. Open Subject to Standard Terms and Conditions These are areas where standard terms and conditions are sufficient to protect other land uses or resource values.	Total subsurface acreage with high development potential minus acreage in categories 2 and 3 below. 397,271	Total subsurface acreage with moderate development potential minus acreage in categories 2 and 3 below. 244,954
2. Open Subject to Seasonal or Other Minor Constraints These are areas where moderately restrictive lease stipulations (such as seasonal restrictions) may be required to mitigate impacts to other land uses or resource values.	* Kevin Rim Area Sweet Grass Hills (East & West Buttes) area including the 529 acre BOR revocation * Marias River area above Tiber Reservoir * Cow Creek ACEC * Crucial wildlife areas in the Havre Resource Area 264,321	* Marias River area below Tiber Reservoir * A small portion of Cow Creek ACEC * Crucial wildlife areas in the Havre Resource Area 94,808
3. Closed to Leasing Discretionary These are areas where other land uses or resource values cannot be adequately protected even with the most restrictive lease stipulations. Appropriate protection can only be ensured by closing the lands to leasing.	* WSAs * UMNWSR 34,037	* WSAs * UMNWSR 86,076
¹ BLM, 1987	TOTAL HIGH 695,629	TOTAL MODERATE 425,838

Planned ROW corridors would provide the necessary connections of mineral development areas separated by designated avoidance areas. Publicizing avoidance and restricted areas would facilitate mineral development. This would reduce the mineral application process and concentrate on the available areas, however this still results in a minor negative impact due to cost increases.

Locatable mineral development authorization for roads, pipelines, powerlines, ditches, etc., would be included in a properly filed notice or an approved plan under the 3809 mining regulations. Approval of these facilities would be non-discretionary if they would not cause unnecessary or undue degradation. Facilities associated with saleable or leasable mineral development would be discretionary. This would be a minor impact.

ROW impacts to mineral resource development would be minor on an overall basis.

Emphasis Areas

Kevin Rim

Maximum protection of resource values while continuing provisions for exploration and development of federal minerals would create a significant negative impact to oil and gas developers by increasing operation costs. This could cause drilling and/or well completion delays due to institution of specific drilling windows or time constraints.

The four existing corridors would provide sufficient ROWs for product export pipelines, if significant volumes of CO₂ would be discovered under the Kevin Rim.

Mineral projects which would not meet necessary mitigative stipulations to protect surface resources would be denied. Mineral projects that historically were permitted could be denied.

The only locatable minerals in the Kevin Rim are found in a sandstone formation containing iron and titanium. An ACEC designation of this area would have only a minor negative impact on development of these mineral resources. This is because the deposits are remotely located, would require large capital investments to develop and other national sources exist.

Sweet Grass Hills

On all lands within the ACEC designation, the operator would be required to file a Plan of Operations for any exploration or development work including projects disturbing 5 acres or less that previously would have been authorized by the filing of a notice (43 CFR 3809.1-4). The additional workload involved in plan preparation, over that of a notice, and the need to wait for formal appeal would be a minor negative impact to operators and development of the mineral resources.

On lands within an ACEC, the Memorandum of Understanding between BLM and the Montana Department of State Lands would not apply. This would be a minor negative impact to effective regulation of operators. This would be minor because both BLM and DSL would still retain their legal regulatory obligations and while there would be no formal cooperative agreement, informal cooperation between BLM and DSL on regulating operators would be expected to continue.

Opening 529.67 acres in the Bureau of Reclamation withdrawal on East Butte to mineral entry is part of this alternative. This would be a significant positive impact to mineral resources because these lands have a high potential for gold and silver deposits. Opening these lands to mineral entry would allow exploration activities that would more accurately access the development potential of these lands, and would provide for the extraction of any economic deposits discovered.

Cow Creek

Identification of paleontological resources and an activity plan would allow easier minerals development access.

More restrictions to mining might result from increased surface resources protection. Less mining and revenue would result, but this would be minor impact because there is little mining potential. Overall impacts to minerals would be minor.

Impacts to Vegetation

Land Tenure Adjustment

Potentially, 15,664 acres of public land would be disposed of through sale, exchange or the R&PP Act; and 34,428 acres disposed of through exchange for other lands in special management areas and areas of high resource value. A significant percentage of this acreage could be diverted to agricultural crops, as native vegetation is plowed. This situation would be of short duration until acquired lands currently under cultivation are returned to native vegetation. This situation would be permanent on 15,664 acres which could be disposed of, since this acreage might be sold without acquisition, even though exchange would still be the preferred method of disposal. Changes in vegetation types would be proportionately lower if less than full implementation should occur or if a portion of the disposal acreage should be exchanged.

Overall impacts would be moderate, if a considerable amount of native range were plowed.

Off-Road Vehicle Management

Limiting ORV use within the UMNWSR Corridor, special management areas, riparian areas and important wildlife areas and closing a portion of the Gist Road would reduce trampling of vegetation and help stabilize soils on which vegetation depends. Impacts would be minor because of the small amount of ORV occurring.

Right-of-Way Location

Excluding ROW location in the wild sections of the UMNWSR Corridor, and in other areas of high resource values or fragile environments would help maintain vegetation in these areas. Exclusion of West Butte of the Sweet Grass Hills as a communication site would protect vegetation on this site from disturbance related to communication site construction. Overall impacts would be minor.

Emphasis Areas

Kevin Rim

Maximum protection in this area may impact livestock management to a very small degree. Where range improvements (water pipelines, spring developments, and fencing) are proposed, there would be additional stipulations required. Examples include enclosing livestock dur-

ing spring or fall grazing from riparian habitats, winter habit or near peregrine falcons nesting sites. Range improvements would not be allowed where unmitigated conflicts with wildlife or cultural resources are involved, such as nesting areas of peregrine falcons.

Sweet Grass Hills

Modifying grazing management on the East and West Buttes of the Sweet Grass Hills would improve the quality and quantity of grasses in this location. Opening 500 acres on East Butte to mineral entry may lead to the loss of some vegetation through trampling, or indirectly by soil erosion resulting from soil disturbance. These would be minor impacts if only limited exploration occurs. The impacts would be locally significant if a major mining development were to occur.

Cow Creek

This alternative would require revising existing allotment management plans to implement more comprehensive management and improve riparian vegetation. Management objectives would be centered on the most critical riparian and non-wooded breaks types. The long-term actions would include development of at least 25 acres of riparian habitats and about 100 acres additional vegetation, if private land is acquired within the area.

About 16,800 acres of non-wooded breaks type would be increased from fair to good range condition in the long term. This would increase the production of preferred species such as western wheatgrass, green needlegrass, and needleandthread grass. Shrubs such as big and silver sagebrush and Nuttall's saltbush would benefit from increased livestock management.

Positive impacts to vegetation in relation to Cow Creek would be significant, but would be minor in relation to the entire planning area.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Impacts to vegetation would be minor. Obviously, small areas where new facilities would be developed could be trampled. Noxious plants may invade newly developed sites.

Impacts to Wildlife and Fisheries

Land Tenure Adjustment

Under this alternative 15,644 acres would be available for land adjustment through exchange, sale and/or the R&PP Act. Crucial wildlife habitat on these lands includes: 200 acres of ring-necked pheasant habitat; 345 acres of spring sharp-tailed grouse habitat; and 80 acres of winter/spring sage grouse habitat.

An additional 34,428 acres would be available for land adjustment through exchange. These lands provide the following crucial wildlife habitat: 7,340 acres of mule deer habitat; 405 acres of antelope winter habitat; 865 spring sharp-tailed grouse habitat; 650 winter/spring sage grouse habitat.

Wildlife values on disposed of public lands would decrease due to tillage of native range. A monoculture could become more prevalent; providing less food and cover requirements for wildlife. This would decrease species diversity. Impacts to wildlife habitat would be reduced by the inability to till those tracts in rough, steep terrain.

A moderate negative impact to 625 acres of crucial wildlife habitat could occur if the 15,664 acres were disposed of. A moderate negative impact could occur to an additional 9,260 acres if 34,428 acres are exchanged and land use changes. These impacts could be offset by a moderate positive impact from land acquisitions if lands acquired were of greater value for wildlife. These impacts are described under Alternative A.

Off-Road Vehicle Management

Deer and elk fawning or calving areas, antelope winter range, raptor nesting habitat, and grouse breeding-nesting habitat would be seasonally protected from most ORV disturbances (see Table 2.3). Damage to waterfowl, raptor, and non-game bird nesting habitat would be minor. Increased human activity would cause short-term movement of species from the area.

Moderate positive impacts such as seasonal protection of essential habitats would occur because of the low amount of ORV use occurring and expected.

Right-of-Way Location

Most ROWs would cause minor disturbances to habitat and temporary harassment of some wildlife species. Potential impacts to specific habitat types cannot be determined since it is not known where future ROWs would occur. Impacts to wildlife can only be discussed in general terms.

ROWs would cause short-term harassment of most wildlife species and would cause temporary wildlife movement from the area. There would be a minor loss of habitat from most ROWs such as transmission, pipe, and telephone lines. Submerged ROWs across the Missouri River could impact fisheries. ROWs through wetlands could disturb aquatic habitat by destroying fragile wetland vegetation, increasing sedimentation, and affecting annual runoff.

Wildlife would benefit by not allowing ROWs in wilderness study areas, the Cow Creek area, the Missouri River Corridor, and West Butte of the Sweet Grass Hills. About 37,000 acres of crucial elk habitat; 138,050 acres of crucial mule deer habitat; 4,500 acres of crucial white-tailed deer habitat; 59,000 acres of crucial bighorn sheep habitat; 4,500 acres of crucial ring-necked pheasant habitat; and 1,542 acres of riparian habitat would avoid disturbance. Overall impacts would be minor because of the low number of ROWs anticipated throughout the life of the plan.

Emphasis Areas

Kevin Rim

Restricting mineral leases and land use authorizations on Kevin Rim would reduce the amount and intensity of disturbance to raptors. Limiting ROWs to four corridors would limit disturbance in the remaining areas of the rim. These impacts would be a locally significant positive impact, but minor overall.

Sweet Grass Hills

Modifying stipulations for raptor protection would reduce the amount and intensity of disturbance to raptors. Elk in the Sweet Grass Hills would benefit from modifications in grazing management which would maintain elk habitat in good condition. Some elk habitat in pristine condition would be maintained. These would be locally significant positive impacts. Opening 500 acres of land on East Butte to mineral entry could create a new disturbance to elk, raptors, and deer in this area. A large open pit operation could have long-term significant impacts on big game by reducing habitat.

Cow Creek

Riparian habitat would be expected to improve and increase in size because of a strong emphasis on riparian management in AMP revisions. If all private land within the area would be acquired, about 100 acres of riparian would be secured. Livestock grazing management, placement of livestock watering sources outside the creek bottom, and excluding livestock from riparian habitats with enclosures would improve riparian condition. About 100 acres of crucial white-tailed deer and pheasant habitat could be secured. Beaver and non-game bird habitat would also improve. The 220 acres of crucial mule deer habitat would improve. Significant local improvement of wildlife values would occur, but overall effects would be minor in relation to the planning area.

Upper Missouri National Wild and Scenic River Management

Visitor Services

The impacts of recreation management including facility and concession management would be the same as in Alternative A.

Impacts to Grazing Management

Land Tenure Adjustment

The 15,664 acres could be disposed of through sale, exchange and/or the R&PP Act; and then 34,428 acres could be disposed of only by exchange. Less than full implementation of the land tenure objectives, or disposal other than by exchange, the preferred method, would significantly decrease the opportunities for improved grazing management opportunities.

Disposal of lands by sale would eliminate the potential of improved grazing management opportunities. There are 15,664 acres that could be lost through sale. This would have a moderate negative impact.

Exchange of small isolated tracts of public land for private inholdings would be a moderate positive impact. The 50,092 acres would be the maximum amount that could be disposed of through exchange. An exchange eliminates management of small acreages allotments which are uneconomical to manage and allows acquisition in other allotments of more concentrated larger federal acreage to improve management opportunities.

Consolidation of public lands in special management areas or in areas of high resource values, would improve the ability to implement livestock management options.

Off-Road Vehicle Management

The closure of the Gist Road could limit the ability of the grazing permittee to maintain a fence located around the Gist cabin. This would be a minor impact.

Right-of-Way Location

There would be no impacts from this alternative. If any type of trenching would occur and trenches were open for 24 hours, livestock bridges must be provided. The grazing permittee or lessee must be notified prior to any construction activities.

Emphasis Areas

Kevin Rim and Sweet Grass Hills

Designation of these areas as ACECs might impact livestock grazing to a minor degree. Livestock management facility development would be restricted by protective stipulations. Examples might include protecting riparian habitat, winter wildlife habitat, or raptor nesting habitats from livestock grazing in the spring or fall. Range improvements would not be allowed where unresolved conflicts would occur with cultural and wildlife resources.

Cow Creek

The inclusion of riparian management objectives and the designation of this area as an ACEC would require a comprehensive revision of the five, existing AMPs. Additional cross fences, water developments and more intensive livestock management and BLM monitoring might be required. Impacts to grazing would be minor.

Upper Missouri National Wild and Scenic River Management

Visitor Services

Minor impacts would occur from the disruption of livestock grazing patterns. Where recreation use occurs, livestock may be forced to vacate or avoid shaded areas.

Impacts to Cultural Resources

Land Tenure Adjustment

Exchanging 34,428 acres may affect approximately 305 sites of undetermined value. Of the sites, approximately 61 might be valuable enough to warrant retention. Disposal through sale, exchange or the R&PP Act of an additional 15,664 acres would affect approximately 138 sites. Approximately 27 of these sites would be valuable enough to warrant retention. Fewer cultural sites would be affected if there would be less than full implementation of the land tenure objectives or if a portion of the disposal acreage would be exchanged.

Land exchanges and acquisitions would have a beneficial impact on cultural resources if more valuable historic and archaeological sites were acquired than disposed of. Lands with significant cultural resources should receive a high priority for acquisition.

Off-Road Vehicle Management

Off-road vehicle impacts to cultural resources are primarily caused by erosion resulting from concentrated vehicle traffic for an extended time. In areas where travel is restricted to roads and trails, there would be no greater impact to archaeological or historical sites than is now occurring. In open ORV travel areas, a number of sites could be affected for the first time. There is no way to estimate the quantity of impacts since BLM has not inventoried much of the land in the principal ORV areas (Missouri River Breaks). The impact is not expected to be major because ORV use in the planning area is currently relatively minor.

Right-of-Way Location

Locating rights-of-way to minimize impacts to cultural and other resources, principally along existing ROW routes would decrease the potential of disturbing cultural sites. Excluding the West Butte of the Sweet Grass Hills from location as a communication site would decrease the potential of disturbing traditional Native American religious practices or cultural sites. These impacts would be minor.

Emphasis Areas

Kevin Rim

Development in a zone (1/4-mile x 8 miles) below the Kevin Rim escarpment would not be authorized if impacts to cultural resources could not be mitigated. It is estimated that there are 70 sites on public land and the 270 sites on public mineral estate. About 30% of the 70 sites and most of the highly significant sites would receive no impacts. This would be moderately beneficial impact. The impacts would be the same outside the zone as they would be for Alternative A.

Sweet Grass Hills

This alternative would put the BLM into a more active role in the management of cultural and religious sites in the Sweet Grass Hills, but Native American religious sites could continue to be impacted as in Alternative A. Designation of the area as an ACEC would provide the BLM more control of the resources in the area, because the area would no longer be administered under the MOU with the Department of State Lands. However, significant impacts would continue to occur to both cultural and religious sites because mining, as described in Alternative A, would continue.

Opening 529.67 acres of East Butte, that have been withdrawn, would increase the potential for disturbance to traditional Indian religious practices and cultural sites. This would be a significant negative impact because the lands could then be disturbed by mining.

Cow Creek

The proposal to designate this area as an ACEC might enhance the preservation of the historic setting of the Nez Perce Trail by limiting future development. Because the area would permanently be subject to more stringent development standards this is a long term significantly positive benefit.

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Overall, impacts would be moderately positive. Increased public awareness via the development of interpretive sites would enhance cultural resources along the river.

Impacts to Recreation

Land Tenure Adjustment

Providing 34,428 acres for exchange and 15,664 acres for disposal through exchange, sale or the R&PP Act would include 6,440 acres of public land which currently have public access. Recreational use of public lands is much higher on parcels with public access, but hunting and other dispersed recreational activities would only be minimally affected.

Most lands identified for disposal or exchange are low quality lands from a visual standpoint. No VRM Class I areas (highest visual quality) are identified for disposal or exchange. A small percentage of VRM Class II and III lands would be affected. Acquisition acreages would generally be of higher visual quality because they would be located in special management areas or areas of high resource values. This would be a minor effect.

Land adjustments would provide a multitude of significant positive benefits. Access would be provided to a number of important areas so that users can maximize each area's recreational values. These areas generally include the Missouri and Marias Rivers, the WSAs, the Sweet Grass Hills, the Kevin Rim, Congressionally designated trails, important fishing reservoirs and hunting areas, etc. Some of the public lands would be consolidated so the recreational values would be better protected or enhanced. In addition, a more definable public land pattern would reduce confusion for recreational users.

Off-Road Vehicle Management

Limitations on ORV use would improve opportunities for non-motorized recreation. Visual quality in these areas would improve slightly because of reduced ORV use. Opportunities for motorized forms of recreation, including big game hunting, would decline slightly because of ORV limitations and closures. Impacts would be minor.

Right-of-Way Location

Rights-of-way exclusion and avoidance areas would benefit non-motorized recreational use and visual quality by retaining the natural quality. This would be a minor benefit.

Emphasis Areas

Kevin Rim

The impact of protecting the rim would be primarily for interpretive values. Providing intensive management for raptors, would allow visitors an opportunity to see these wildlife resources. Overall recreational impacts would be minimal.

Sweet Grass Hills

The preferred alternative would have both negative and positive impacts for recreational and ORV use. Portions of the area would be restricted which limits the area users can travel. The positive benefit would be that an ORV plan would be prepared, thereby protecting recreational users from dangerous mining operations and sites.

The VRM quality would be enhanced and impacts to the pristine character of the land would be minimized. Another positive impact would be that wildlife populations would be protected; benefiting recreation users of wildlife resources. Overall impacts would be minor.

Cow Creek

ACEC designation would combine a multitude of management plans into one activity plan. Long-term goals for the area would be more coherent and one plan would be easier to understand by the public. The activity plan would provide the guidance necessary to develop an interpretive and recreational plan that combines all the area's special management values.

Visual and natural qualities of the land would be enhanced and protected. Projects would be constructed in conformance with the activity plan.

Impacts to recreation would be moderately positive.

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Visitor Services

The addition of temporary exclosures around high use recreation sites would provide facility users with more pleasant facility sites. This would be a minor impact.

Facility Management

Restricting the future development of facilities in recreational sections and prohibiting future development of facilities in wild sections of the UMNWSR would limit management options on the UMNWSR. This could result in regulating use of the river through user capacity, but overall it would be a minor impact.

Concession Management

Operation of some recreation facilities in high use areas of recreational sections within the UMNWSR Corridor by the private sector could provide a wider array of recreation opportunities. This would be a minor impact.

Health and Safety

Expansion of visitor services within the UMNWSR Corridor would result in minor improvement in the health and safety of recreationists.

Impacts to Social and Economic Conditions

Land Tenure Adjustment

Please refer to Alternative B for a general discussion of the impacts.

Landownership transactions under this Alternative could result in the disposal through exchange, sale or the R&PP Act of 15,664 acres; and the exchange of another 34,428 acres of public lands. If exchanges were used as the only method of disposal, the exchange of 50,092 acres of public lands for private and/or state lands would have a minor net fiscal effect on PILT, State Equalization Payments and annual county property tax revenues. The net fiscal effect would depend on whether the land adjustment is with private landowners or state and local governments. However, the sale of public lands to private individuals or organizations could increase annual county property tax revenues

as a result of increasing the taxable land base. At the same time, federal PILT on public lands would be reduced as a result of transferring lands out of public ownership. Additional analysis of impacts would be necessary when a specific land adjustment and tracts are identified.

Off-Road Vehicle Management

Limiting travel to existing roads and vehicular ways in WSAs could require affected ranch operations to substitute horses or foot travel for casual vehicle use and thereby increase management costs. Designating lands in other areas as limited to off-road vehicles could increase costs to lessees of public lands such as ranchers and oil and gas operators. In those areas where ORV use now occurs, restrictions could increase costs to lessees. Because of the need for a permit on a case by case basis for motorized access or the need for non-motorized access to the area. In areas where ORV use does not occur, the future opportunity to open an area to development activities would be limited. The character of recreational use would change, adversely impacting those who use motor vehicles while benefiting those who prefer non-motorized forms of recreation. Maintaining access in all other areas for recreation, ranching and mineral activities would not curtail the future opportunity to open an area for resource development. These changes would only have a minor impact to the local economy.

Right-of-Way Location

The designation of avoidance areas could cause a utility or transportation corridor to take a longer route, and thus increase the cost of construction for transmission lines. The actual impact cannot be assessed further without specific details of a proposed corridor. With East Butte an established communication site, exclusion of West Butte of the Sweet Grass Hills would probably have little or no impact on development of future communication sites. All other areas open to rights-of-way location would not limit or curtail utility corridor development for transmission lines or the development of communication sites. These changes would only have a minor impact to the local economy.

Emphasis Areas

Kevin Rim

Managing Kevin Rim under special management guidelines would not preclude utilization of the area for grazing, recreation, oil-gas, mineral and other resource development but would restrict activities in sensitive areas. The buffer zones that would be established around active raptor or peregrine nest sites would restrict resource development and subsequently the associated economic benefits. These changes could have a minor impact to the local economy.

Sweet Grass Hills

Managing the Sweet Grass Hills under special management guidelines would not preclude utilization of the area for grazing, recreation, oil-gas, and mineral resource development and subsequently the associated economic benefits. Mineral exploration in the area would offer very limited employment and income opportunities for the local economy. While development would provide long-term employment and income opportunities. Benefits from hard-rock mining could be partially offset by curtailing some recreation use and the associated benefits to the local economy. Hunting is prominent in the lifestyle of many area residents and use of the Sweet Grass Hills for hunting is

important to these people. Some ranch operations could experience a disruption of current grazing practices with a change in grazing management to emphasize maintenance of elk winter habitat. There would be no significant change in current economic and social trends, but these changes could have a minor impact to the local economy.

The practice of traditional religion by Native Americans has caused some concern regarding changing the character of the area by mineral exploration and/or development. The area offers the pristine qualities and solitude that are required for these religious practices. This is important to Native Americans in maintaining their traditions and culture. Exploration and mining in the Sweet Grass Hills would seriously alter the solitude of the surrounding environment, making a religious experience difficult to obtain.

Mining operators would be required to file a Plan of Operations for formal approval by BLM on any exploration or development work they want to perform. This would give management more control over disturbance to the environment and a basis for consultation with Native Americans about religious use of the area.

This management action could cause a moderate change in the solitude and undisturbed environment of the area for Native Americans who use this area for religious purposes.

Cow Creek

Managing Cow Creek under special management guidelines would not preclude utilization of the area for grazing, oil-gas, mineral and other resource development. In the long term, some ranch operations could experience a disruption of current grazing practices with a change to emphasize intensive management of riparian vegetation. This would be insignificant to the local economy. There would be no change in current economic and social conditions.

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Visitor Services

This alternative provides for some recreation developments and the expansion of recreation concessions and leases onto public lands in the recreational segment of the river. This would provide the opportunity for development by the private sector. Annual revenue for concessions, leases and local businesses would probably increase in the long term, but this impact would be minor.

Hunting, fishing and other recreation use in the area is expected to increase in the short and long term with existing outfitters and guides receiving additional income over time. Currently, seven permitted outfitters offer services along the river, ranging from fully outfitted and guided trips to basic canoe services. In addition, two companies in Fort Benton utilize large pontoon craft. The local economy would benefit from an increase in expenditures for recreation services (motels, service stations, restaurants, etc.) but these changes would only have a minor impact to the local economy.

SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

Alternative A – No Action

Soils

Sedimentary breaks soils and glaciated prairie drainage soils could be significantly damaged by ORV short-term use due to the development of trail-road erosion, travel on wet soil, wind erosion on sandy soils, and increased water erosion during wet periods. Even limited ORV use on fragile soils would generally cause a drastic reduction in long-term soil productivity and values. Locally significant damage to riparian soils could occur from short-term ORV damage to streambanks and resultant increased wind and water erosion. These impacts could become locally significant in portions of 477,763 acres.

ROW facilities construction/maintenance in high erosion susceptibility areas, shallow soils, slopes greater than 25%, sparse native vegetation, and slumping and mass wasting areas (148,335 acres) could cause locally significant long-term damages.

Water

Locally significant negative impacts could occur from ORV use on portions of 477,763 acres. Sediment yields from affected areas would degrade water quality. ROW facilities constructed in sensitive areas as described above could result in significant damage to water resources primarily from soil erosion and sedimentation (148,335 acres).

Minerals

Continuance of the no lease regulations for oil and gas in the UMNWSR corridor could result in drainage of federal oil and gas minerals by state and private wells.

Acquisition of federal minerals in areas managed under more stringent surface constraints (such as wilderness study areas) could create a locally moderate impact to oil and gas development.

Permitting locatable minerals exploration and development on 530 acres of a currently withdrawn area in the Sweet Grass Hills would be locally significant positive effect due to the high potential for mineral occurrence.

Vegetation

ORV use on fragile vegetation types (such as 2,997 acres of riparian areas) and unrestricted ORV use on 477,763 could create significant damage over short-term and long-term periods. Current ORV use (motorcycles) appears confined to a 640-acre area which has severely damaged 6 acres.

Locally significant impacts could occur if visitor use increases at recreation facilities in the UMNWSR Corridor. An increase in vegetation trampling, noxious plant invasion, soil compaction and erosion could be expected.

Wildlife and Fisheries

There could be a long-term loss of crucial habitat through land disposal actions.

Nesting raptors would be significantly damaged by long-term mineral and oil-gas activities on the Kevin Rim because the 1/4-mile protection zone is ineffective.

Potential large mining operations in the Sweet Grass Hills may create long-term significant damage to elk habitat and populations. Current mining is limited.

Cultural

Some cultural sites could be destroyed by unrestricted ORV use.

Future mineral development in the Kevin Rim area could cause a loss of cultural sites through destruction or excavation.

Future mineral development in the Sweet Grass Hills would create long-term impacts to the solitude and undisturbed environment which makes this area an important source of Native American religious sites.

Recreation

Public land acquisition would provide many significant positive benefits from access development to recreation areas including the Missouri and Marias Rivers, the WSAs, Sweet Grass Hills and others. This could be a long-term benefit.

Social and Economic

Land exchanges could cause a fiscal effect on PILT to affected counties. These changes are dependent on specific land adjustment actions.

Increased mineral exploration and development in the Sweet Grass Hills would cause a change in the solitude and pristine environment which is critical for Native American religious practices.

Alternative B

Soils

Locally significant impacts in sedimentary breaks soils and riparian areas would occur in ORV use areas. Increased soil and water erosion would occur locally over 594,098 acres. Locally significant damage to soil would occur from intensive ORV use on a 640-acre area. Reduced soil productivity would occur from soil compaction and wind-water erosion.

ROW siting could result in locally significant soil erosion and slumping in fragile environments with shale, steep slopes, and sparse vegetation (100,000 acres). These impacts would be long term and significant.

Water

Locally significant decreases in water quality could occur from increased erosion from ORV use on 594,098 acres. ROW facilities would potentially produce significant damage if placed in high sediment areas by decreasing water quality due to runoff, erosion and sedimentation. These could be both short and long-term productivity losses on 285,190 acres.

Minerals

Continuing the no lease policy in the UMNWSR Corridor could result in federal oil and gas drainage by state and private wells. Acquisition of federal minerals in areas managed under more stringent surface constraints could create a locally moderate negative impact to oil and gas development. Permitting locatable minerals exploration and development on 529 acres of currently withdrawn area in the Sweet Grass Hills would be locally significant positive mineral effect due to the high potential for mineral occurrence.

Vegetation

A moderate, long-term change from native vegetation to other forms of vegetation would result from implementation of other land uses following the sale of public lands. Intensive ORV use within a designated intensive use area would completely eliminate vegetation on about 20 acres. Locally significant damage to vegetation would occur at recreation facilities in the Missouri River Corridor from a large increase in visitor use.

Wildlife and Fisheries

All wildlife habitat could be lost on 50,092 acres of disposed of (sale) public land. This would be a significant long-term productivity loss.

Significant damage to nesting raptors would result from surface disturbance on Kevin Rim because the current 1/4 mile protection criteria does not protect them.

Large mining operations in the Sweet Grass Hills may create long-term significant damage to elk habitat and populations. Present mining activity is limited.

Grazing

Disposal of 50,092 acres of public land would reduce grazing management opportunities on the lands sold.

Cultural

Some cultural sites could be destroyed by unrestricted ORV use.

Future mineral development in the Kevin Rim area could cause a loss of cultural sites through destruction or excavation.

Future mineral development in the Sweet Grass Hills would create long-term impacts to the solitude and undisturbed environment which makes this area an important source of Native American religious sites.

Recreation

Public land acquisition would provide many significant positive benefits from access development to recreation areas including the Missouri and Marias Rivers, the WSAs, Sweet Grass Hills and others. This could be a long-term benefit.

Social and Economic

Land exchanges could cause a fiscal effect on PILT to affected counties. These changes are dependent on specific land adjustment actions.

Increased mineral exploration and development in the Sweet Grass Hills would cause a change in the solitude and pristine environment which is critical for Native American religious practices.

Alternative C

Soils

Sedimentary Breaks soils and glaciated prairie drainages soils could be significantly damaged by ORV use due to development of trails resulting in road erosion, travel on wet soil, wind erosion on sandy soils and increased water erosion during wet periods. Even limited ORV use on fragile soils would generally cause a drastic reduction in soil productivity and values. ORV use in riparian areas could significantly decrease streambank stability by breaking down banks. This would result in increased wind and water erosion in these areas. This would be a long-term loss.

ROW siting could result in locally significant soil erosion and slumping in fragile environments with shale, steep slopes, and sparse vegetation. These impacts would be long term and significant.

Intensive riparian management would produce significant positive results and increased streambank stability in the Cow Creek area.

Water

Locally significant decreases in water quantity could result from increased erosion from ORV use on 197,462 acres. ROW facilities potentially would produce significant damage if placed in high sediment areas by decreasing water quality due to runoff, erosion and sedimentation. These could be both short and long-term productivity losses.

Minerals

Land tenure adjustments uniting BLM surface and subsurface acreage would result in pursuance of a protective withdrawal. This would be a long-term, significant impact. Continuance of the no lease policy for oil and gas in the UMNWSR Corridor could result in drainage of federal oil and gas by state and private wells. There would be a significant impact from land adjustment in the Sweet Grass Hills if acquired mineral estate was placed under a protective withdrawal.

A significant negative impact to unleased oil-gas resources would result if a protective withdrawal is pursued in the Sweet Grass Hills due to drainage of federal minerals by adjacent private and state wells.

Precluding locatable mineral exploration on 529.67 acres in the Sweet Grass Hills and possible development on lands without valid, existing rights would be a significant negative impact to mineral resource assessment and development.

Vegetation

A moderate, long-term change from native vegetation to other forms of vegetation would result from implementing of other land uses, following the sale of public lands. Disturbance of vegetation would decrease over a long-term period because of restrictions placed on ORV use and ROW location. Improvement of vegetation in the Cow Creek area would improve because of riparian enhancement measures.

Wildlife and Fisheries

Wildlife values could decrease on 15,664 acres identified for disposal if these lands should leave public ownership. Moderate gains in crucial wildlife habitat acreage could be realized through acquisitions. Segregation from mineral entry in the Sweet Grass Hills ACEC and improved riparian habitat in the Cow Creek ACEC would significantly improve wildlife habitat in these localized areas.

Grazing

The sale of 15,664 acres of public land could reduce grazing management opportunities.

Cultural

About 138 archaeological and historical sites could be lost as a result of disposal of public lands. Approximately 27 of these sites would be significant enough to warrant their retention. Some cultural sites could be damaged or destroyed by ORV use or ROW activity. Restrictions placed on impairing activities within the ACECs would reduce or eliminate impacts. This would be a long-term positive impact.

Recreation

Federal land acquisition would provide many significant positive benefits by access development to recreation areas including the Missouri and Marias Rivers, the WSAs, Sweet Grass hills and others. This could be a long-term benefit.

Social and Economic

Land exchanges could cause a fiscal effect on PILT to affected counties. These changes would be dependent on specific land adjustment actions.

Minerals

Continuing the no lease policy for oil and gas in the UMNWSR Corridor could result in drainage of federal oil and gas by state and private wells. Land adjustment which unites federal surface and subsurface would produce a locally significant positive impact to oil-gas development, particularly in the Missouri River Corridor. Acquisition of federal minerals in areas managed under more stringent surface constraints could be a locally moderate negative impact to oil and gas development.

Federal land adjustments which consolidate public lands in areas containing locatable and saleable minerals would produce a locally significant positive effect.

Alternative D

(The Preferred Alternative)

Soils

Sedimentary Breaks soils and glaciated prairie drainages soils could be significantly damaged by ORV use due to development of trails resulting in road erosion, travel on wet soil, wind erosion on sandy soils and increased water erosion during wet periods. Even limited ORV use on fragile soils would generally cause drastic reduction in soil productivity and values. ORV use in riparian areas could significantly decrease streambank stability by breaking down banks. This would result in increased wind and water erosion in those areas. This would be a long-term loss.

ROW siting could result in locally significant soil erosion and slumping in fragile environments with shale, steep slopes, and sparse vegetation. These impacts would be long term and significant.

Intensive riparian management would produce significant positive results with increased streambank stability in the Cow Creek area.

Water

Locally significant decreases in water quality could result from increased erosion from ORV use on 199,142 acres. Potentially ROW facilities would produce significant damage if placed in high sediment areas by decreasing water quality due to runoff, erosion and sedimentation. These could be both short and long-term productivity losses.

Maximum protection of non-oil/gas resources would create a significant negative effect to oil-gas development by increasing costs in the Kevin Rim.

Permitting locatable mineral exploration and development on 529.67 acres of a currently withdrawn area in the Sweet Grass Hills would be a locally significant positive effect due to the high potential for mineral occurrence.

Vegetation

A moderate, long-term change from native vegetation to other forms of vegetation would result from implementation of other land uses, following the sale of public lands.

Large scale mineral development in the Sweet Grass Hills on the 529.67 acres currently withdrawn would create a locally significant negative effect on livestock forage availability.

Vegetation in the Cow Creek area would be significantly improved by improving riparian and non-breaks vegetation types management.

Wildlife and Fisheries

Wildlife values could decrease on 15,664 acres identified for disposal if these lands should leave public ownership. Moderate gains in crucial wildlife habitat acres could be realized through acquisitions.

Application of raptor protection criteria to the Kevin Rim would be a locally positive, significant impact.

Locally significant positive impacts in the Sweet Grass Hills would result from increased raptor protection criteria and livestock grazing changes to enhance elk habitat.

AMP changes to emphasize riparian improvement, private land acquisition, exclusion of livestock from riparian habitat by fencing, and procurement of crucial wildlife habitat would produce significant local improvement in the Cow Creek area.

Grazing

Sale of 15,664 acres of public land could reduce grazing management opportunities on lands.

Cultural

About 305 archaeological and historical sites could be lost as a result of disposal of public lands. Approximately 61 of these sites would be significant enough to warrant their retention. Acquisitions and exchanges could secure valuable cultural sites on a long-term basis. Some cultural sites could be damaged or destroyed by ORV use or ROW activity. Restrictions placed on impairing activities within the ACECs would reduce or eliminate impacts. This would be a long-term, positive impact.

Opening 529.67 acres of withdrawn land to mineral activities would create a significant negative impact on Native American religious practices and cultural sites at the East Butte of the Sweet Grass Hills.

Recreation

Significant positive results would accrue from land adjustment that produces better public access, consolidation of public land, and better defined public land units.

Social and Economic

Land exchanges could cause a fiscal effect on PILT to affected counties. These changes are dependent on specific land adjustment actions.

Increased mineral exploration and development in the Sweet Grass Hills would cause a change in the solitude and pristine environment which is critical for Native American religious practices.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

All impacts presented below would constitute an irreversible and irretrievable commitment of resources.

Alternative A (No Action)

Soils

Sedimentary breaks soils and glaciated prairie drainage soils could be significantly damaged by ORV use. Even limited ORV use on fragile soils would generally cause drastic reduction in soil productivity and values. Locally significant damage to riparian soils could occur from ORV damage to streambanks and resultant increased wind and water erosion.

Locally significant soils damages would occur from ROW facilities construction-maintenance in high erosion susceptible areas, such as: shallow soils; slopes greater than 25%; sparse native vegetation; and slumping and mass wasting areas.

Water

ROW facilities would potentially produce significant damage if placed in riparian habitats, floodplains, wetlands, and high sediment areas by decreasing water quality and streambank stability.

Minerals

Permitting locatable mineral exploration and development on 529.67 acres of currently withdrawn area in the Sweet Grass Hills would be a commitment of that resource after mining.

Vegetation

ORV use on fragile vegetation types (e.g., 2,997 acres of riparian areas) could create significant damage over time and potential concurrent soil loss.

Alternative B

Soils

Soil productivity loss would occur from ORV compaction and wind-water erosion on an intensively used 640-acre area.

ROW siting could result in significant soil erosion and slumping in fragile environments.

Water

ROW facilities potentially would produce significant damage if placed in riparian habitats, floodplains, wetlands, and high sediment areas by decreasing water quality and streambank stability.

Minerals

Permitting locatable mineral exploration and development on 529 acres of currently withdrawn area in the Sweet Grass Hills would be a commitment of that mineral resource, once mined.

Vegetation

ORV use on fragile vegetation types could create significant damage and concurrent soil loss overtime.

Wildlife and Fisheries

A net loss of crucial wildlife habitat resulting from the sale of public lands would be an irretrievable loss.

Alternative C

Soils

Sedimentary Breaks soils and glaciated prairie drainage soils could be significantly damaged by ORV use. Even limited ORV use on fragile soils would generally cause drastic reduction in soil productivity and values.

Water

ROW facilities potentially would produce significant damage if placed in riparian habitats, floodplains, wetlands, and high sediment areas by decreasing water quality and streambank stability.

Minerals

Loss of unreleased oil-gas resources might occur from drainage adjacent by private and state wells if the Sweet Grass Hills were segregated from mineral entry.

Vegetation

ORV use on fragile vegetation types could create significant damage and concurrent soil loss overtime.

Wildlife and Fisheries

A net loss of crucial wildlife habitat resulting from the sale of public lands would be an irretrievable loss.

Alternative D (The Preferred Alternative)

Soils

Sedimentary breaks soils and glaciated prairie drainage soils could suffer locally significant damage by ORV use. Even limited ORV use on fragile soils would generally cause drastic reduction in soils productivity and values.

Water

ROW facilities would potentially produce significant damage if placed in riparian habitats, floodplains, wetlands, and high sediment areas by decreasing water quality and streambank stability.

Minerals

Permitting locatable mineral exploration and development on 529.67 acres of currently withdrawn area in the Sweet Grass Hills would be a commitment of that mineral resource, after mining.

Vegetation

ORV use on fragile vegetation types could create significant damage and concurrent soil loss over time.

Wildlife and Fisheries

A net loss of crucial wildlife habitat resulting from the sale of public lands would be an irretrievable loss.